



NetworkWorld

The leader in network knowledge ■ www.nwfusion.com

July 5, 2004 ■ Volume 21, Number 27

Rx for patching mired in red tape



■ BY ELLEN MESSMER

The epidemic of Windows-based worms and viruses in the past year has put hospital IT administrators on a state of high alert to protect patient-care systems that have become reliant on Microsoft operating systems.

The challenge they face in securing these medical systems is that it's not simply a matter of applying software patches. Healthcare IT professionals say medical device makers prohibit them from changing the systems and even from running anti-virus

software in some cases. These IT administrators say manufacturers often are slow to supply software patch updates and routinely claim the Food and Drug Administration (FDA) requires approval of patch-base changes. However, the FDA says it has no such rules and is looking for medical device makers and customers to work out their differences.

"We're on the verge here," says John Murray, the FDA's software and electronic records compliance expert. "Something bad could happen," he says, referring to a patient being harmed as a result of worm-infected medical

See Unpatched, page 10

Tumbling telecom rates give customers leverage

■ BY DENISE PAPPALARDO

While prices for voice, IP and traditional data services such as frame relay have been in free-fall for three years, the largest service providers continue to slash rates.

This means that if you haven't recently reviewed and renegoti-

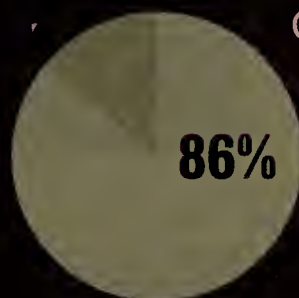
ated your telecom contract, chances are you're paying more than is necessary for voice and data services.

"Users can expect to get 25% to 30% price reductions when negotiating a new contract for the same services as their old

See Prices, page 14

SPECIAL SECTION

The offshoring question



Survey of about 500 IT executives and outsourcing vendors.

SOURCE: DIAMONOCLOUD INTERNATIONAL

Offshore outsourcing is on the rise – 86% of companies currently using outsourcing services said they expect offshored work to increase in the next year. Our report looks at everything from the benefits to the drawbacks of this hotly debated topic. Section begins on page 28.

The promise of offshoring

Lower costs, flexibility and expanded resources are driving businesses to look overseas.

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Jobs at risk

Repetitive, commoditized IT work most likely to head offshore.

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The downside of offshoring

Poor communication, cultural differences and lack of expertise can derail engagements.

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A political hot potato

Legislatures juggle offshore outsourcing regulations.

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A global gambit

India gets a lot of attention but Estonia, Russia and China want in too.

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Offshore guidance

You've made the decision to outsource, now what?

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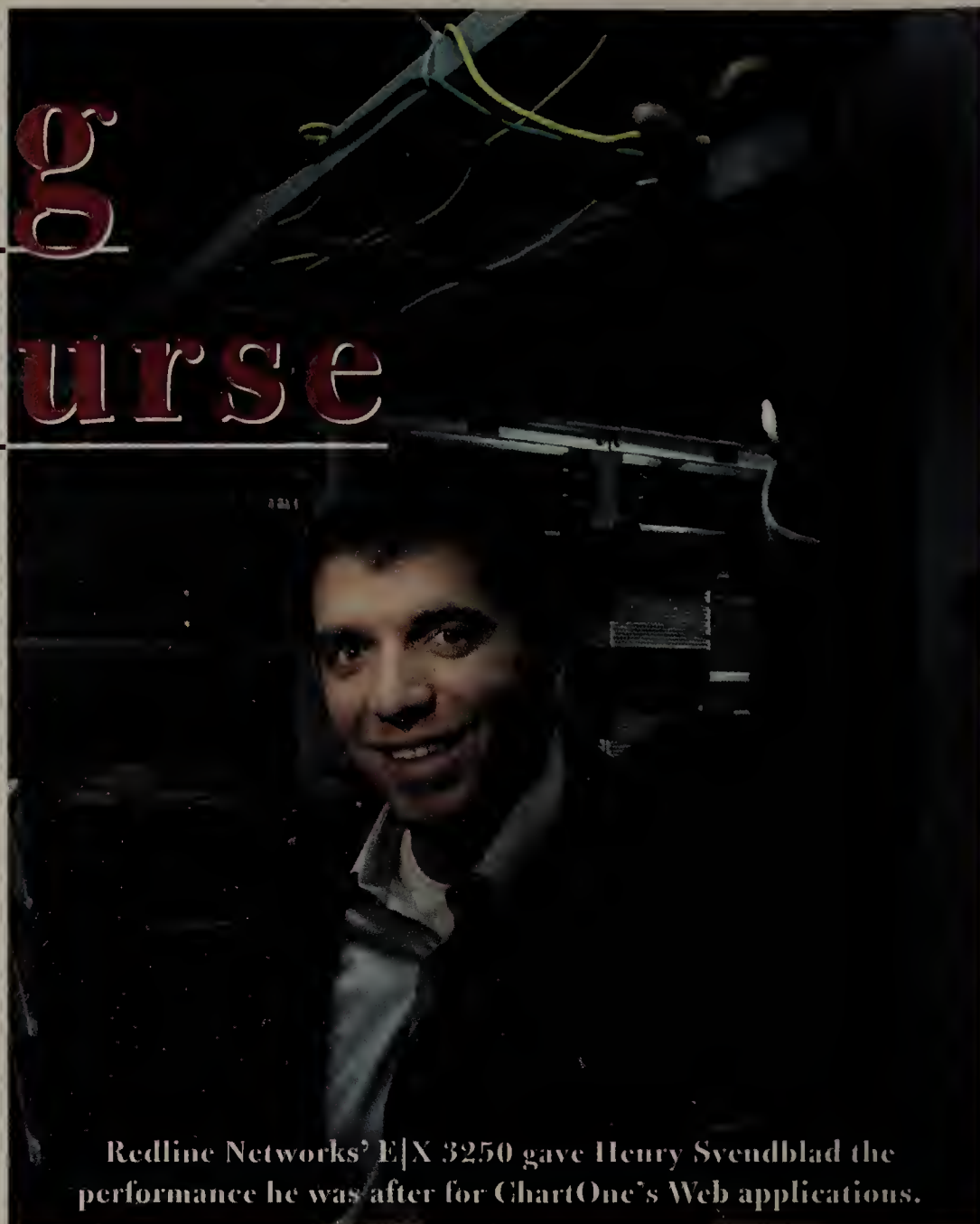
Face-Off

Do offshoring's benefits outweigh its drawbacks?

Page 42

Charting a Web Course

Redline Networks helps medical records management firm ChartOne cure network pains and boost the business case for its Web-enabled ERP apps.



Redline Networks' E|X 3250 gave Henry Svendblad the performance he was after for ChartOne's Web applications.

Photograph by Robert Houser

NO IT EXECUTIVE LOOKS FORWARD TO ASKING upper management to spend \$200,000 on a major system upgrade. But Henry Svendblad, director of IT at ChartOne, Inc., felt he had little choice.

ChartOne, based in San Jose, California, sells technology and services that help health care institutions easily and cost-effectively access and manage patient records. To better serve its customers, which represent 20% of hospitals in the U.S., and to ease the burden on its own IT staff, the company wanted to migrate its ERP applications to the Web.

Like many companies transitioning to Web-based applications, ChartOne hit performance snags that no amount of application tuning and new hardware could cure. Only after two years of trial and error did ChartOne find a cure in Redline Networks, which makes a family of appliances that deliver a broad set of capabilities to ease the network burdens and boost the business case for Web-enabled applications. With Redline's E|X 3250 enterprise application processor handling I/O processing, connection management, compression, load balancing and SSL processing, ChartOne customers and internal users are now experiencing the performance they require — and the company's IT group is realizing the administrative benefits that Web-enabled applications can bring.

ON THE WEB TRAIL

ChartOne's odyssey began in July of 2001, when the company began migrating its homegrown client/server enterprise applications to Peoplesoft 8, a Web-based ERP suite. "We were expecting growth of 20% to 30% a year, and we felt we needed a big ERP system," Svendblad says. In addition, thin, standardized browsers would require far less IT support than fat, homegrown clients.

If ChartOne was going to offer Web-based patient records management services, Svendblad also felt the company "should eat our own dog food" and use a Web-based application platform internally.

Webification proved to have its challenges, however. As more application modules and users moved onto the new infrastructure, response times slowed to a crawl. Employees at the company's 10 remote offices sometimes spent hours waiting for tickler screens that had taken minutes to display under the old client/server system. The 10- to 15-person offices had plenty of bandwidth, IT staffers knew: In anticipation of the migration to Peoplesoft 8, they'd deployed T1 links to each site.

Users on the corporate LAN were also having

difficulties. By far, the worst off was the accounts receivable department, which processes more than 300,000 transactions per month. Productivity had dropped by 20% because of response time degradation. "During peak usage periods, it was taking people minutes to go from screen to screen," Svendblad says.

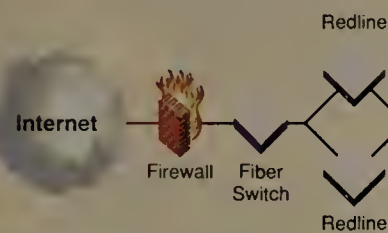
ChartOne's Challenges

- Web-enabled enterprise applications were overloading servers.
- Server processors were at 80% to 90% utilization levels during peak traffic periods.
- Slow response time over corporate LAN was hurting user productivity.
- Remote users waited hours for screen downloads.

The Redline Networks Cure

- Average server CPU utilization during peak usage now between 10% and 15%.
- Response time returned to desirable levels for local and remote users.
- Remote sites no longer need terminal servers.
- Bandwidth consumption decreased approximately 70%.
- Savings of \$200,000 by avoiding major hardware upgrades.

ChartOne Cures Data Center Pain



IMPROVED PERFORMANCE

Accelerated PeopleSoft and Hyperion
Improved scalability of existing
servers and switches



HIGHER AVAILABILITY

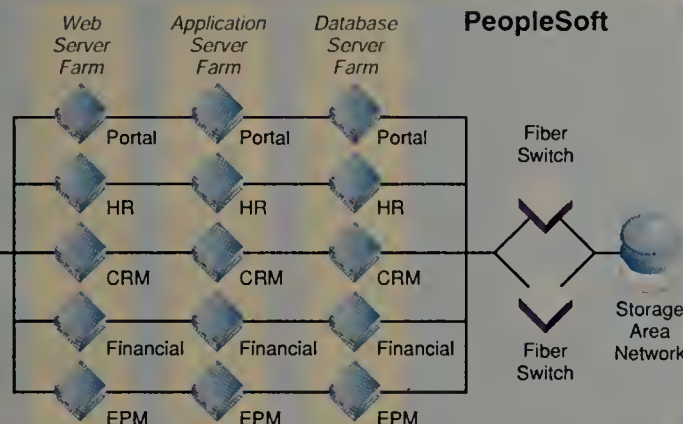
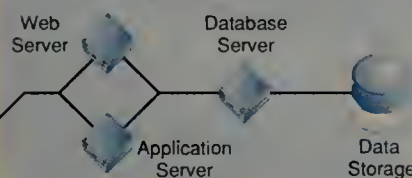
Eliminated client-server in remote sites
Simplified network infrastructure



EASIER MANAGEMENT

Reduced number of costly
security certificates
Saved \$200,000 in server upgrades

Hyperion Business Performance Management



setup also strained budgets and IT resources.

Meanwhile, Web and application servers were still maxing out during peak usage periods. A major upgrade seemed inevitable. "It looked like we needed a new [BEA Systems] WebLogic server, a new database server and a third server for finance," Svendblad says. His team priced out three SunFire servers on the second-hand market at about \$50,000 apiece. He also budgeted \$50,000 for a LAN upgrade, bringing the total budget hit to \$200,000, which Svendblad calls a conservative estimate.

ONE VERY BRIEF PILOT

Just as he was about to swallow that bitter pill, a former colleague told Svendblad about Redline Networks in Campbell, Calif., and its family of appliances that help enterprises manage the network impact of Web-enabled applications and improve their business case.

In the summer of 2003, ChartOne deployed Redline's E|X 3250 enterprise application processor in front of its WebLogic servers. The Redline device took over complex scheduling of TCP requests and connection management chores for as many as 150 users, saving the Web servers' CPU and memory resources for other activities like page generation. The E|X also performed data compression to speed up server response and conserve bandwidth.

Svendblad's group started out with a pilot test within the accounts receivable group, which took the biggest performance hit after moving to PeopleSoft 8. Setting up users was simple and transparent, Svendblad reports: "I just changed the local DNS setting, and when users clicked on the PeopleSoft icon, they were routed through the Redline box. We didn't have to change anything on

our existing architecture, or on the WebLogic or PeopleSoft servers."

User response was fast and dramatic. "People were asking us if we'd put some magic juice in their system," Svendblad reports. When word spread, end users not involved in the pilot "were pounding on our door saying, 'Whatever you did for her, do for me!'" It may have been the shortest pilot on record: A day after the test started, the company routed all the other users through the Redline box.

TALLYING THE BENEFITS

Once the bulk of users was online, the benefits of the Redline device really began to kick in, Svendblad reports. Average CPU consumption during peak processing time plummeted from 80% or more to less than 15%. Bandwidth consumption decreased approximately 70%.

The E|X 3250 now handles SSL encryption, as well. "We have security without burdening our servers with managing certificates or with SSL," Svendblad says. The company also saves money on SSL certificates, since it needs only one for the Redline box instead of one for each server.

Over the past year, ChartOne brought its customer relationship management, HR and Hyperion Business Performance Management applications behind the Redline box. Most recently, the company added its View Manager: Chart Management Suite of ASP offerings to the set of applications front-ended by the E|X platform.

After ChartOne installed the Redline Networks E|X 3250, user response was dramatically faster. "People were asking us if we'd put some magic juice in their system," says Henry Svendblad, director of IT.

ChartOne's hundred-odd remote and mobile users have completely eliminated their terminal servers and use a standard Web browser to access all applications, via the E|X 3250. "The user experience is improved, and our support costs are lower," Svendblad says.

The bottom line: ChartOne successfully implemented a Web-enabled ERP platform with a "single box solution" that addresses critical Web tier issues while dramatically improving the business case by increasing user productivity and avoiding costly hardware upgrades. End users now experience the same response time levels and productivity they had with customized fat clients — but IT no longer has the support burden. Says Svendblad: "I think that's pretty impressive."

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1998

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SanDisk lets you store content while maintaining a wireless connection. **Page 24**

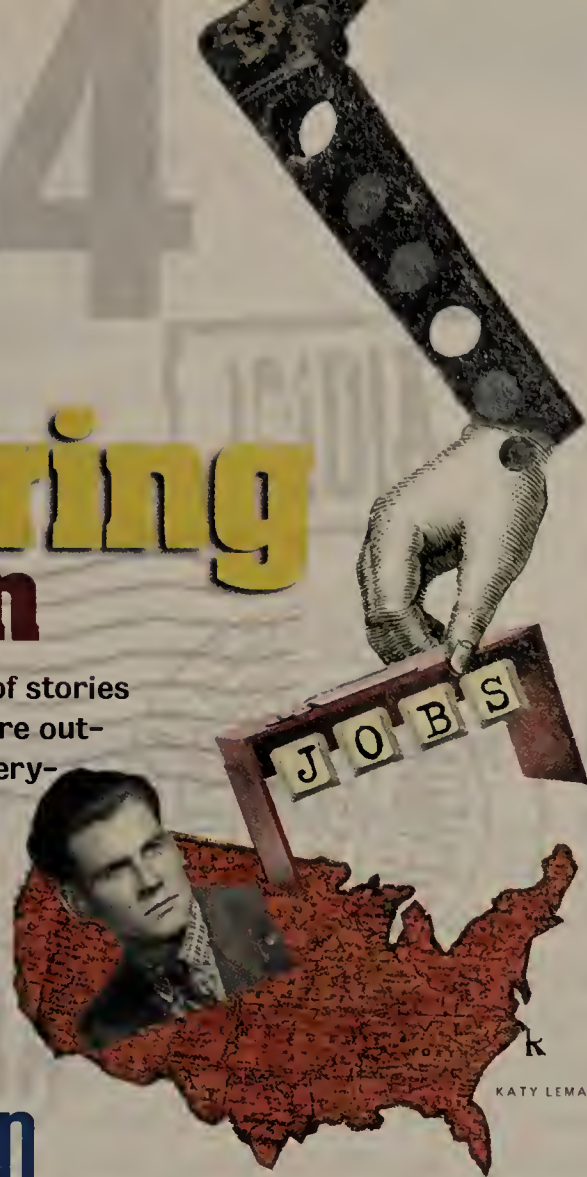
Testing volunteers needed

Network World is looking for enterprise networks to be a part of a test to be conducted on security appliances with firewall, intrusion-prevention system, VPN and policy-based management features. Requirements: a T-1 connection, 10 to 200 users behind security devices and a willingness to let a security consultant assist in appliance management. Volunteers will have access to all test results. **Contact Christine Burns at cburns@nww.com.**

SPECIAL SECTION

The offshoring question

We've put together a package of stories that will help clarify the offshore outsourcing debate. We look at everything from why companies are offshoring work to the regulations state and federal legislatures are putting in place to stop offshore outsourcing. **Stories begin on page 28.**



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Exclusive

Network World Fusion Radio: Insuring e-business

What happens if your e-business is downed by something out of your control? Do you have insurance to cover the potential losses? John Quarterman, CEO of InternetPerils, discusses the issue of e-business insurance. **DocFinder: 2746**

Call for Nominations: 2004 Network World Reader-Recognition Awards

Send in your choices for the 2004 Extended Enterprise Innovator Award and the 2004 User Excellence Award. **DocFinder: 2747**

Buyer's Guide: IM management tools

Peruse the latest product specs on instant-messaging management products alphabetically or by comparing and contrasting two or more products. **DocFinder: 2748**

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Columnists

Wireless Wizards

When will 802.11 and cell service integrate? The Wizards answer a reader who asks: "In reality, how close are we in providing seamless service to users by integrating the corporate wireless LAN and the public cellular services?" **DocFinder: 2750**

Telework Beat

When you can't work from home, Part 7
Net.Worker Managing Editor Toni Kistner introduces you to the Manhattan "work club" entrepreneur who started the communal work space movement. **DocFinder: 2751**

Small Business Tech

New book answers all your questions
Columnist James Gaskin talks to John Locke, author of *Open Source Solutions for Small Business Problems*, on how the phenomenon fits with SMBs. **DocFinder: 2752**

HomeLAN Adventures

Home storage options
Columnist Keith Shaw tests three storage products for your home network. **DocFinder: 2753**

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News

Bits

Hate spam? Say hello to SPIT

■ VoIP management vendor Qovia is warning of what it regards as a nuisance waiting to happen: the inevitable arrival of audio spam that clogs VoIP customers' voice mailboxes. VoIP spam, or Spam over Internet Telephony (SPIT), will rear its head as soon as there are enough VoIP customers to make it worthwhile for advertisers to send pre-recorded messages via IP, the company says. "It's only a matter of time before the spammers see a critical mass," says Pierce Reid, Qovia's vice president of marketing. In anticipation, Qovia has filed for a patent on software that detects voice messages sent in bulk or that are exactly the same length and then block them from being stored in voice-messaging systems. The company plans to start selling the software later this year.

Gates: Progress being made against spam

■ Customers of Microsoft's Hotmail service play an integral part in the company's fight against junk e-mail, Chairman and Chief Software Architect Bill Gates said in an open letter last week. He also dismissed the idea of generating revenue from spammers by imposing a charge for sending e-mail. "Monetary charges would be inappropriate and contrary to the fundamental purpose of the Internet as an extremely efficient and inexpensive medium for communications," he wrote. The letter, entitled "Preserving and Enhancing the Benefits of Email — A Progress Report," reviewed the company's work and outlined future plans in the fields of filtering, sender authentication and other preventive measures, and collaboration with regulators and law enforcement officials. Spamming is becoming more difficult and less lucrative, Gates said. For Microsoft customers, the situation is improving thanks to the introduction of Microsoft's SmartScreen spam filter, which it deployed on its Hotmail Web-based e-mail service six months ago, he wrote in the e-mail.

Help desks gear up for Windows XP SP2

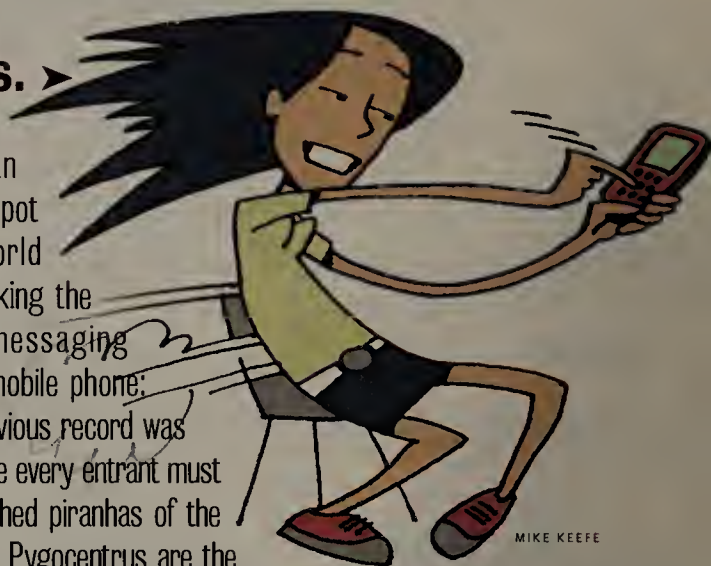
■ The major changes to Windows XP brought by Service Pack 2 — due this quarter — are bound to cause support headaches. Analysts, users, PC makers and Microsoft all expect a spike in help desk calls. The service pack automatically will be downloaded into many PCs through Microsoft's Windows Update service and could create problems, including breaking current applications, disrupting network setups and prompting non-

The Good The Bad The Ugly



Flying fingers. >

Kimberly Yeo, a 23-year-old Singaporean student, has landed a spot in the Guinness World Records book for clocking the fastest time text-messaging 160 characters on a mobile phone: 43.24 seconds. The previous record was 67 seconds. The message every entrant must type is: "The razor-toothed piranhas of the genera Serrasalmus and Pygocentrus are the most ferocious freshwater fish in the world. In reality they seldom attack a human."



MIKE KEEFE



This only spells trouble. Research company In-Stat/MDR sees the market for PCs that double as television sets hitting \$1 billion by 2008 from about \$500 million this year. As if there isn't enough goofing off at work already.



Naughty 'Net. A U.S. Supreme Court ruling last week against a law intended to protect children from sexually explicit material posted online set off a predictable but nevertheless heated exchange between opposing sides. Robert Corn-Revere, a lawyer who has represented free speech advocates in Internet-related cases, said: "The court stressed that parents are the ones that have the primary responsibility here." Disappointed in the decision, Rep. Michael Oxley (R.-Ohio) said: "I don't think that pornographers have any more right to shove their smut into the faces of children in cyberspace than they do at the corner newsstand."

technical users to make PC configuration decisions that might be beyond their grasp. Microsoft will offer free, worldwide telephone support for the service pack. Microsoft is returning to its policy to provide free support for service packs after leaving support for Windows XP SP1 to the PC makers. Nevertheless, HP, Dell and Gateway also are gearing up for the release of SP2 and will support their customers, spokespeople for the PC makers say.

Survey chronicles wasted millions

■ Thirty blue-chip companies surveyed recently by Business Engine, an IT portfolio management software maker, reported wasting an average of \$10 million apiece per year on poorly managed IT projects. The survey found that three key areas account for the majority of the missed opportunities to use IT dollars more effectively. About one-third of the total loss is the result of failure to take advantage of offshore outsourcing, respondents said. "The biggest prize will go to those organizations that start their offshore initiatives as soon as possible," says Doug Dickey, CEO and president of Business Engine. Twenty-eight percent of the losses were the result of poor visibility and control of projects that result in missed deadlines. A failure to align IT with business strategy accounted for another 28% of the losses.

Fighting crime with data

■ The state of Mississippi is deploying a new system that aggregates data from multiple sources — including mug shots, arrest warrants, hazardous materials data and medical emergency protocols — in one database accessible to police and other public safety personnel working in the field. The initial pilot of the Mississippi Automated System Project will support all law enforcement, fire department and emergency medical services within three of the state's counties. The system incorporates IBM's iSeries 825 and xSeries 445 servers running Novell's SuSE Linux, remote access software from Tarantella and IBM's DB2 database software. The project, funded by \$14 million in federal grants, eventually could become a model for linking law enforcement and public safety agencies nationwide, IBM says.

Network Associates now McAfee

■ Network Associates last week officially changed its name to McAfee, as had been planned. The sale of its Sniffer technologies division to Silver Lake Partners and Texas Pacific Group is expected to close by the end of the month, the company also confirmed.

Layer 8

Steve DeFeo of Indianapolis earns a new pip on his collar by supplying the above and winning the latest Weekly Caption Contest. Check Layer 8 every Monday for the start of a new contest.



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Novell CTO updates open source plan

■ BY PAUL ROBERTS

BOSTON — As part of its transition to an open source software model, Novell will scale back its investment in some proprietary technology that competes with open source alternatives.

The company will make only minimal investments in its BorderManager VPN and other products in favor of open source alternatives as it tries to create a blend of open and closed source products, said Alan Nugent, Novell's CTO, at last week's Usenix conference in Boston.

Adopting an open source strategy forced changes in the model Novell used to license its technology and in its traditional, closed-source business model based on vendor lock-in, he said.

Novell now is concentrating on providing quality customer support and maintenance for its products, and targeting proprietary development in areas where there is demand, he said.

The company is investing in and developing proprietary technology in areas that can complement open source initiatives such as storage networks, grid computing, identity management and resource management. Novell also will reduce its investment in technologies that have become commoditized by open source or proprietary alternatives, he said.

Although Novell will be scaling back investment in BorderManager VPN, the company will continue to develop and support the product. It might begin integrating open source VPN components in a way that is transparent to BorderManager customers, Nugent said.

More Novell products will go the way of BorderManager. The company is planning announcements for the LinuxWorld Conference & Expo next month, and the BrainShare Conference in September, he said.

One goal is to focus on technologies in which no open source alternatives exist and in which there isn't much interest from the open source community, such as identity management and provisioning, he said.

Roberts is a correspondent with the IDG News Service.

Cisco buy to link remote resources

■ BY PHIL HOCHMUTH AND DENI CONNOR

Cisco's plans to acquire Actona Networks is a move to help users link remote enterprise resources with corporate storage and file serving.

The proposed \$82 million buyout of Actona, announced last week, gives Cisco a remote office storage and caching appliance, which it will later offer as a module on 2600 and 3700 series WAN routers. Cisco says the technology can be used to eliminate remote file servers, storage and back-up devices from branch offices, while boosting performance of centrally hosted Unix-, Linux- and Windows-based applications.

Actona has 48 employees who will become part of Cisco's Routing Technology Group. The acquisition is expected to close in November. Cisco owned 17% of Actona before the acquisition announcement.

Actona sells a caching appliance that sits in a remote branch office and provides a local instance of files stored on systems in a central data center. The appliance provides support for Network File System (NFS) and Common Internet File System (CIFS) environments used in Unix, Linux and Windows servers.

These local instances of data and their file systems, along with traffic compression, let files be accessed and saved more quickly between the remote and central sites, Cisco says, because CIFS and NFS messages don't have to be passed over the WAN link. Plus, only changes to an opened file are sent back to the central site, instead of the entire file. The technology also eliminates the need for remote office backup, which can be slow over low-speed links, Cisco says.

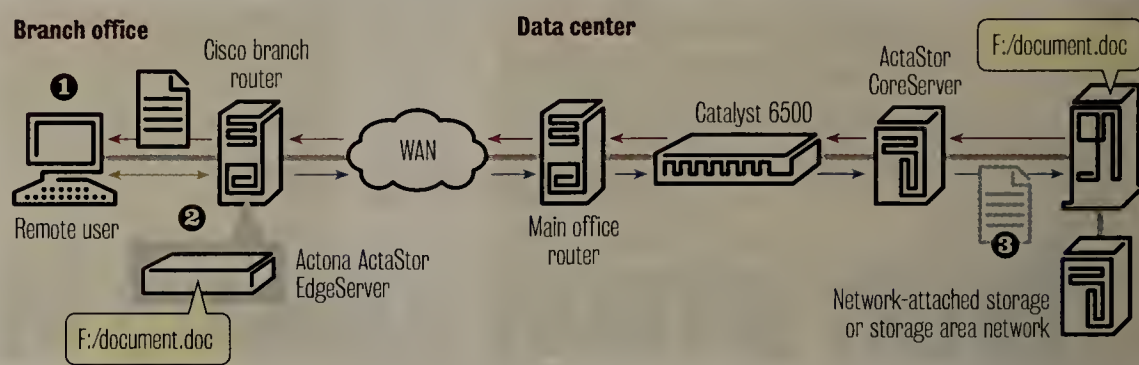
The appliances include local hard disks and can attach to additional storage devices or connect to file servers or network-attached storage systems. They also support print server functions. The products do not support Novell File System.

Actona's devices, which compete with products from Tacit Networks, Riverbed and Novell, are priced starting at \$65,000.

"The acquisition does make sense since it could be used to extend Cisco's intelligent net-

Cisco's server-less branch

The acquisition of Actona Technologies is aimed at letting Cisco routers help speed remote file serving and storage access.



1 A remote office user opens a document. Instead of accessing a local file server, the file is pulled from a data center server and cached on a module on a local Cisco router.

2 An Actona module on the router stores an instance of the file locally.

3 When the file is saved and closed, only the changes, not the whole file, are sent back to the central data center.

work model further into the storage arena," says Jamie Gruener, a senior analyst with The Yankee Group.

Cisco plans to sell Linux-based appliances running on Actona's ActaStore EdgeServer remote

office software, as well as its ActaStore CoreServer data center product. In addition to putting Actona-based blades on routers, Cisco says it plans to put ActaStore CoreServer functions onto a service module for the

Catalyst 6500 switch, which is used widely in data center networks. Cisco expects to have stand-alone, Actona-based products by the year-end, and integrated switch/router products next year. ■

Start-up to tackle app mgmt.

■ BY DENISE DUBIE

IT managers looking to better understand how applications use their network infrastructure — and more quickly spot potential failures — have a new-comer to the application management market to consider.

NLayers, which has received more than \$4 million in venture funding over the past year, this week will launch its InSight product suite. Founder and CEO Gili Raanan says InSight can build a dynamic model of elements that support applications and alert network managers when a change in the infrastructure will adversely affect application performance.

"We model physical servers and application dependencies.

We simplify a very complicated system so customers can make better use of it," Raanan says.

InSight uses a rack-mountable appliance loaded with software that sits in a customer data center and passively monitors traffic using multiple network interface cards to connect to servers and switches. InSight collects copies of application packets crossing the network, stores the information in a built-in database and uses it to model application behavior and create baselines. Instead of SNMP polling, the product uses proprietary algorithms and APIs to gather data from network components in the application infrastructure, a combination of devices, servers, databases and users on which applications depend.

Market research firm APM Advisors says companies such as Collation, Relicore and Vieo also attempt to identify application components and map dependencies between multiple elements to monitor performance. For example, if an end user or a business unit depends on a server that runs PeopleSoft, which depends on a specific switch and so on, the product can identify where along the chain performance degraded and what will be affected.

Lynn Nye, president of APM Advisors, says InSight can give customers a comprehensive view of their application network and let them know in advance how changes, such as adding software to a Web server or rerouting Web traffic through a different server, could affect application performance.

"NLayers is focused on giving customers a picture of what they have and showing them how changes did affect application performance and how new changes could impact performance," Nye says. While passive monitoring is a good start, Nye adds, the company eventually will need to upgrade its product to include active polling and data gathering if it wants to compete with Computer Associates, IBM Tivoli and Mercury Interactive, which also are looking to manage application infrastructure.

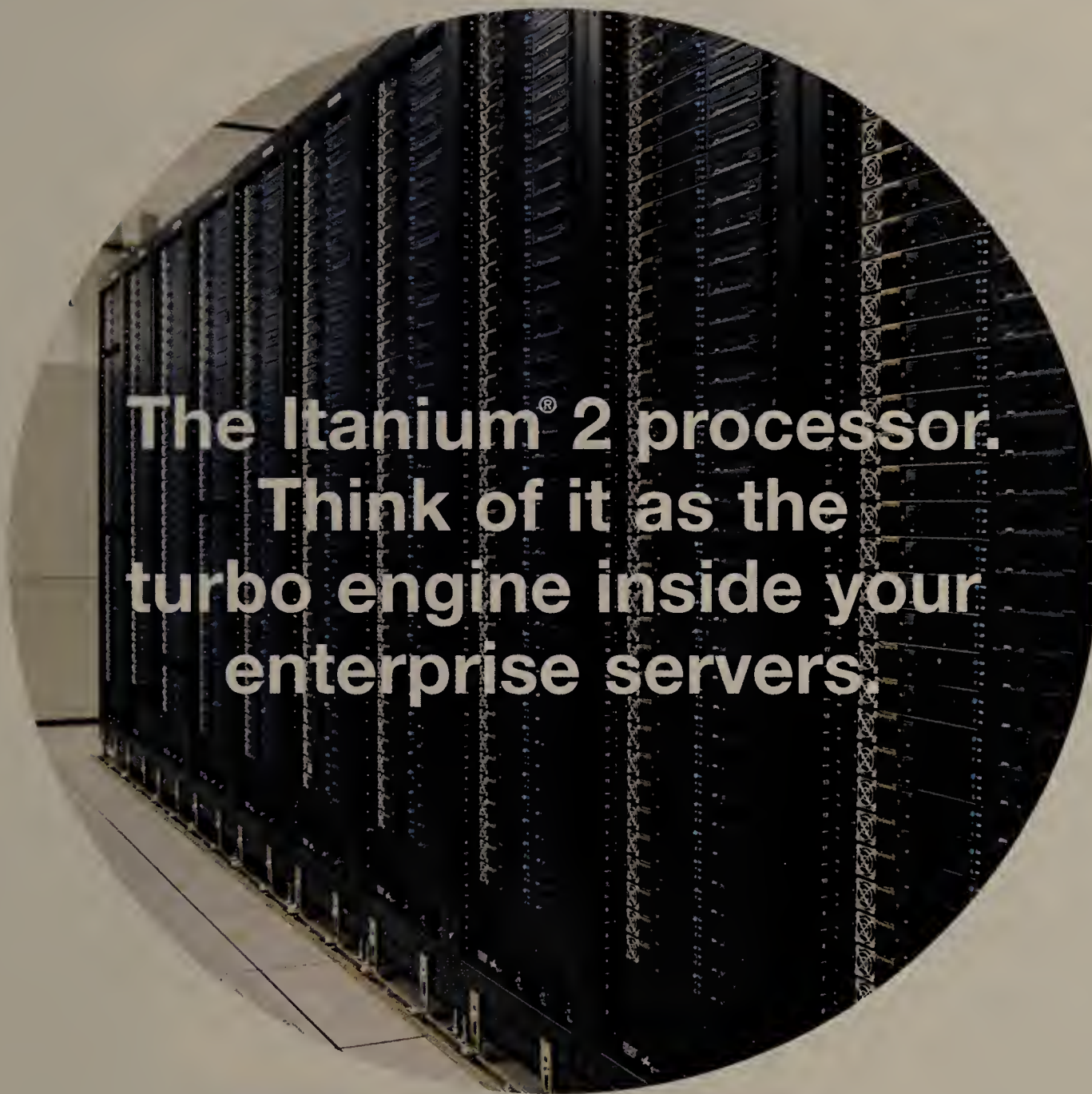
Pricing for nLayers InSight starts at about \$2,500 monthly with the subscription payment model or \$45,000 for a perpetual license. ■

Downtime dilemma

Gartner estimates the hourly cost of downtime for networks at \$42,000, and

54%

of the time applications are the cause.



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Unpatched

continued from page 1

gear malfunctioning simply because it didn't get the needed security patch update in time.

Blaster, Sasser and other attacks on the 'Net over the past year haven't left hospital networks untouched. ECRI, the Plymouth Meeting, Pa., technical advisory and information services firm for the medical industry, says it has gotten reports of computer worms invading hospital networks and forcing IT staffs to take patient-care equipment offline.

"Medical devices have been impacted where staff has to walk data over from a printout" rather than viewing it from a screen at bedside, says Jim Keller, director of ECRI's Health Devices Group. "We have no case of anyone injured yet."

Hospitals, particularly the more modern ones that rely on networks for quickly sharing medical imaging and patient health data, have the most to lose in the battle against fast-moving Internet worms. Many IT administrators say the biggest medical-device manufacturers — GE Healthcare, Philips Medical Systems and Siemens Medical Solutions — haven't decided on the patch-management process on equipment over which they demand control. (Of these three, only GE Healthcare responded to our questions.)

Getting hit

Healthcare IT administrators say a crisis is brewing.

At North Shore Medical Center, Windows-based ultrasound machines have been hit by worms and Trojans that include Sasser, mbblast and backdoor.hackdefender, says Barbara Corning-Davis, enterprise clinical imaging

manager at the healthcare organization that is part of Partners Healthcare System in Boston.

"The [Philips Medical Systems ultrasound] machines are constantly being infected with viruses," she says. "This has become a major issue for the hospital IS departments across [our organization and affiliated outfits]."

The portion of the Philips ultrasound machines that takes patient exams was not affected by Sasser, but the processing workstation was, Corning-Davis says. So patient exams were captured and stored as images but weren't routable across the hospital network until virus and worm outbreaks were cleaned up. "This resulted in some additional time per exam, walking down the hall vs. processing in the same room," she says.

North Shore has seen the same situation occur with GE Medical Systems' fluoroscopic-imaging equipment and Agfa computer-radiology equipment running on Windows NT, she adds.

With the Philips gear, the healthcare organization's IT staff applied Windows-based security patches on its own, after failing to get a timely response from Philips, she says.

"Philips told us they would turn patches around within seven days of being released by Microsoft, but they have not met this, sometimes being behind a year or more," Corning-Davis says. While North Shore might be taking some legal risk in installing patches on its own, the hospital decided that eliminating security risks to patient-care systems was more important.

Delays a problem

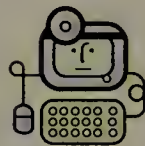
Another healthcare organization, Baystate Health Systems in Springfield, Mass., says its Windows-based cancer-care imaging and treatment equipment from Siemens Oncology Medical Solutions hasn't been patched in several months.

"It's one major Windows Service Pack behind," says Dan Maloney, Baystate's assistant director for network services and infrastructure, clinical engineering. "And I can't get Siemens to tell me if I can even run anti-virus software on it."

Under terms of its equipment contract with Siemens Medical Solutions, Baystate isn't allowed to reconfigure the system's hardware and software. "If you apply the patches, you void the agreements associated with the device," Maloney says. So the hospi-

In need of patching triage

IT professionals, medical device makers and the FDA are struggling to find the best way to keep healthcare networks secure from viruses and worms that can attack networked medical systems.



Healthcare IT professionals

They want to patch networked medical devices and run anti-virus software against them, but say their hands are tied by medical device makers and the FDA.



Medical device makers

They're balancing the need to keep their products from getting infected by viruses and worms with making sure the devices meet FDA requirements.



FDA

It requires medical device makers to adhere to strict manufacturing processes, but wants IT pros and device makers to work out their differences.

tal has to depend on Siemens to do the patching.

Maloney says Siemens has told him that the healthcare organization has "to go through the configuration change, test it internally and then submit the change to the FDA for approval."

Other hospital IT administrators are hearing similar things from their medical device suppliers.

"Pretty much all the radiology modules and other systems such as echo and EKG run under Windows," says Judy Klickstein, senior vice president of IT at Cambridge Health Alliance in Massachusetts. "These vendors do not keep up with the patches because of the FDA rule."

Richard Kubica, managing director of IS infrastructure at Hartford Hospital in Connecticut, says: "There are systems we cannot patch because of FDA requirements."

Pointing fingers

But the FDA says fingers shouldn't be pointed in its direction.

"The medical device manufacturers say they need FDA approval, but they don't," Murray says. "If this is a security or virus-related patch, it doesn't require the pre-market submission."

Device makers do, however, need to follow quality-system regulations when they implement any change such as a patch, Murray says. This would require management control documentation, he adds.

Murray says he is deeply concerned about the possibility of viruses harming patient-care equipment that uses commercial operating system software, though he also worries that patches could cause problems.

He says he knows of a case in which a blood-bank system that was based on a commercial database received a patch update and "half the records got deleted."

Murray also says he knows that healthcare organizations are being told by device makers that "if you patch it yourself, you are liable for the device." Medical device makers and their customers need to work out a solution before the government steps in, he says.

One vendor's response

GE Healthcare defended its practice of not allowing patch updates until it gives the go-ahead. GE also doesn't allow anti-virus software on Windows-based medical systems it sells unless it gives permission. "The intrusive nature of anti-virus scanning can disrupt clinical operations," said Scott Bolte, GE Healthcare's product security manager via e-mail.

"The issue is not that IT people aren't capable of doing their own patches but the fact that they first should be verifying with the manufacturer the safety of the patch for use with that device," wrote Bolte about GE keeping control over the patching process. "GE rigorously tests all software updates before making them available to customers."

Although GE Healthcare didn't explain how it interacts with the FDA in terms of software patches, Bolte said, "The FDA requires all medical equipment manufacturers to follow good manufacturing processes (GMP). A GMP cornerstone is verifying that a product continues to be safe and effective after it is modified."

When asked if there are specific time frames for accomplishing

patch updates once a software patch is available, Bolte answered, "It all depends on the nature of the security issue. When necessary, we proactively contact customers to notify them of imminent threats, such as we did with MS/Blaster, and then make patches available as soon as they have been verified."

Bolte suggested that hospitals use the "defense in depth" principle by applying external controls such as firewalls, Layer 3 switches and virtual LANs to restrict network access to medical equipment. He noted that the Department of Veteran Affairs in April issued a publication titled "Medical Device Isolation Architecture," which he says is an excellent guide to how proper network controls can help manage the risks posed by malicious software without interfering with day-to-day clinical operations.

Cooperation critical

Hartford Hospital's Kubica says he knows from experience that the relationship between hospital and medical-device manufacturer need not be adversarial in terms of patch management.

The hospital uses a Windows-based system built by Heartlab for viewing veins and arteries. The medical device maker insists on managing the patch update process — it dictates how the hospital has to set up its network for the device and the remote patching process — but Kubica says Heartlab does a reliable and timely job.

Nevertheless, Kubica says he wishes the hospital's IT staff could do the patching. "I would prefer to have control over it ourselves," he says. The smaller manufacturers often seem to be more nimble than the industry giants when it comes to patch management, he adds.

Some hospitals are taking such a hands-on approach to eliminate security weaknesses that ship out-of-the-box with medical equipment based on Windows.

Corning-Davis from North Shore says this means everything from changing weak passwords that ship with equipment to removing Microsoft's Internet Explorer unless it's absolutely needed. It also means restricting the IP address that can communicate with the machine and setting up virtual LANs just for sensitive medical equipment. ■



THIS WEEK'S QUESTION:

Who is the primary subject of the 2000 book *Money from Thin Air*?

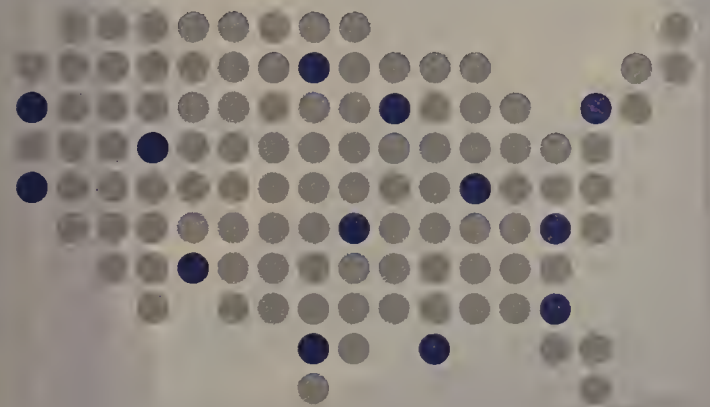
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Site: Lessons from leading users

Air Force unwires fighter maintenance

■ BY JOHN COX

An airman with the 57th Aircraft Maintenance Squadron powers up a portable air conditioner to cool down an F15E's avionics, then ducks under the jet's wing to escape the broiling Nevada sun.

He opens a laptop to access via a wireless LAN the fighter's maintenance history, checks the airframe's flight hours and schedules maintenance on the right engine's utility hydraulics pump.

The laptop is a state-of-the-art ruggedized device from Itronix: You can submerge it in jet fuel and still type in commands. But the secure WLAN that connects technicians with data and application servers on the Nellis Air Force Base network is made up of off-the-shelf Cisco 802.11b access points and bridges.

Nellis was the incubator and first site for a WLAN model that is now being rolled out at 50 air bases across the U.S. It's a key element in the service's point-of-maintenance program, which is intended to speed aircraft maintenance. Using the WLAN, the technicians can finish more work right at the aircraft, minimize travel over miles of runways and taxiways, and pare down time-consuming paperwork at the end of work shifts that can last 10 to 12 hours.

The Nellis maintenance WLAN grew out of early wireless experimentation by a team of Air Force innovators with the 57th. These 900 folks do everything from pump gas, change tires, and load rockets and bombs to overseeing maintenance schedules for a half-dozen types of warplanes. They work on the flight line, where the jets are parked along Nellis' 3-mile-long runways, and in special concrete retaining areas where live munitions are stored and loaded.

The WLAN now blankets this entire area, giving all flight line maintainers instant access, at 5M to 11M bit/sec, to Nellis' Core Automated Maintenance System (CAMS), a database that stores all kinds of data about each aircraft. The CAMS data is now updated faster, right from the flight line, and more accurately, says Master Sergeant Mark Howarth, the squadron's network administrator.

Users no longer have to collect and restore tools, and then wait for a ride back to an office to use a computer.

Broader deployment

A related initiative developed by Telos,

a federal systems integrator that's been working on Air Force wireless projects for several years, involves packaging this WLAN system into what the Air Force calls a deployment server. This server is an easy-to-install box that can be packed up and shipped anywhere that warplanes have to be cared for on short notice in areas that lack the infrastructure on established bases.

The deployment server has been shipped to units working with the Predator pilotless drone, which was used in Afghanistan, and its jet-powered counterpart, Global Hawk. Both are based at Nellis.

Eventually, the WLAN will access digi-



A WLAN at Nellis AFB lets this airman with the 57th Air Maintenance Squadron access server data on a fighter jet's maintenance history. Without leaving the aircraft, he can update records, order parts and schedule repairs. The same WLAN model is being rolled out at 50 U.S. air bases.

tized technical data, Howarth says. The Air Force is phasing out the bulky, printed maintenance manuals, often with 2-foot-long foldouts of complex schematic diagrams, with digital data on servers and sometimes CD-ROMs. That's already being partly done for some aircraft, such as engines for the F15 fighter, and completely done for the pilotless drones. A recent news story reported that Lockheed Martin's plan to introduce electronic manuals for the F16 Fighting Falcon, to replace 50,000 printed pages in 250 volumes, would save \$500 million over the remaining life of this aircraft.

A key figure in the evolution of the WLAN project is former Sergeant Steven Carlson, now a senior WLAN administrator with Telos, still working at Nellis. In 1998, he persuaded his superiors to invest \$95,000 in WLAN access points and bridges to cover about 90% of the flight line and another \$5,000 on WLAN gear to be used instead of running fiber

See Air Force, page 14

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Prices

continued from page 1

[expired] contract," says Mark Wintler, group vice president of worldwide telecommunications at IDC. "That seems pretty typical and consistent" for most users across the board.

The expectation early this year was that continued pricing pressure was bad for the industry and that it was going to dissipate. "But now it's clear it is not," he says.

MCI may or may not have fired the first shot, but the carrier clearly added to further price declines with a direct mail campaign it sent out late in the first quarter.

In March and April MCI sent AT&T customers a letter that guaranteed rate reductions. The letter said, "Any new business that you select to migrate to MCI, MCI offers you up to 40% savings with a minimum savings guarantee of 25% from rates that you are currently paying."

MCI offered specific savings on a variety of services from audio conferencing to IP VPN services. The company would not say how many AT&T customers received the letter, but one report in *The Wall Street Journal* said about 500 letters were sent out.

"Our objective was not to fuel a price war but to promote MCI services to AT&T customers," an MCI spokeswoman says. MCI says the promotion was devised after AT&T CEO David Dorman proclaimed during a press conference in January that AT&T "will not be beat on price."

Air Force

continued from page 13

to the distant ordinance loading area, a project that would have cost \$1.2 million.

"My people did the install, the troubleshooting and all that, and we stayed within USAF regs for security and management," he says. "We were pretty much writing those regs as they are now for wireless policy."

Security initially consisted of changing encryption keys on a regular basis and a set of procedures for manually changing all the keys on all laptops and access points if necessary. Today, Nellis uses multiple layers, including Wi-Fi Protected Access, key changes five times each hour and running all WLAN traffic over a VPN for encryption and authentication.

Eventually, says Telos' Chief Wireless Architect Rob Smith, there will be a single sign-on capability, a full 802.1x implementation and a public-key infrastructure. "Full-blown PKI requires a hardware token, like a smart card, but the government hasn't sorted that out yet," Smith says.

Howarth and Carlson are proud that the Air Force's Network Intrusion Team, dubbed the Red Team, has been unable to crack the WLAN's existing security. "They said it was a significant improvement [in WLAN security] over the previous generation of wireless," Carlson says.

One issue not faced by most enterprise networks was ensuring safety in the sites. "We checked the output power and frequencies to make sure we wouldn't make anything go 'boom,'" Carlson says. ■

Plummeting prices

MCI recently sent users a letter promoting 25% to 40% rate reductions for a variety of services. Here's a sampling from that letter.

Service	Port speed	Example of old monthly price	Example of new monthly price	Savings
MPLS	256K bit/sec	\$260	\$180	31%
IP VPN	T-1, 1.544M bit/sec	\$1,150	\$850	26%
Internet access	Burstable T-1 up to 128K bit/sec	\$450	\$325	28%
Frame relay	64K bit/sec	\$135	\$85	37%
Private line	T-1, up to 200 miles*	\$540	\$400	26%
Audio conferencing	Unattended toll free	\$0.1350**	\$0.10**	26%

*Private line service is distance sensitive.

**Per minute.

AT&T says Dorman's comments merely reflected the company's commitment to stem losses it attributed to its failure to fight fire with fire.

No matter which carrier started the war, analysts agree that MCI's letter is a valuable negotiating tool for customers.

"This is an important development," says David Rohde, analyst at TechCaliber Consulting.

Rohde says the letter indicates that there are savings to be had for customers who revised their contracts as recently as 12 months ago. Although this particular promotion is over, the rates and savings MCI promises can be used as a starting point for negotiations, he says.

"Savings users can get on these services are quite substantial when you factor in the idea that [any carrier] would not publish and send out in a direct mail piece their best offer," he says.

MCI is offering these rates and

better, and AT&T, Sprint and others have responded, he says.

"There has clearly been competitive pricing and we have been talking to our providers," says Larry Quinlan, CIO at Deloitte Consulting in New York. "One of the best practices we have been doing is building a clause in our contract where we can annually renegotiate rates so we can ride the curve down."

But as Quinlan notes, lower rates don't automatically translate into lower costs. "Yes, we have been getting lower per-unit rates, but at the same time our bandwidth requirements have continued to skyrocket," he says.

Customers who sign multi-year contracts are advised to include rate-review clauses so they can take advantage of lower rates if they become available, Rohde says. Those who do not have such clauses typically cannot get out of their contract without penalties. Rohde advises users to start negotiating a new contract about nine months before a contract is set to expire.

While the carriers say price wars are not good for anyone, analysts say the largest interexchange carriers and even incumbent local exchange carriers are aggressively fighting for enterprise business.

One Forrester Research client that is in the process of renegotiating its contract is seeing similar pricing from AT&T and MCI in its second round of negotiations, says Lisa Pierce, a vice president at the consulting firm. This user spends \$3 million per year on data and voice services.

But in that second round of talks, MCI also offered an incentive. If customers reached certain milestones on their contracts they would receive "huge" credits, Pierce says. After the credit, MCI's overall contract is 35% lower than AT&T's offer.

The milestones that trigger these credits are typically based on dollars spent, usage or expired time on a multi-year contract. "I don't like these [credits] because they do not allow a user to compare their contracts apples to apples," Pierce says. "It distorts the process."

In this case other bidders offered smaller credits. "But MCI's was 10 times more," she says.

Users need to keep in mind that price is only one factor in contract negotiations. "There are some very important non-price issues that users also have to consider," Pierce says.

For users issuing an RFP to move from frame relay to Multi-protocol Label Switching, their top priority should not be price but reliability and performance, she says. Once those two criteria are met, negotiating the best price should come into play.

While price wars translate to lower service rates for most users, the result is business service revenue that goes down only for the carriers. While AT&T, MCI and Sprint are on the verge of announcing their second-quarter earnings, everything is pointing to the fact that revenue will be even lower than expected, IDC's Winther says.

While lower monthly rates are good for all users on tight budgets, in the long run lower prices could translate into customer service issues and less reliable network performance.

"This silver cloud can have a dark lining if the carrier doesn't have enough money to invest in research and development or training their people," Pierce says. ■



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Short Takes

■ **IBM Global Services** has begun offering a round-the-clock monitoring service to detect rogue wireless LANs by using the AirDefense wireless sensor and equipment IBM developed. The price for the monitoring service starts at \$15,000.

■ **Microsoft** and **Fujitsu** are expanding a **global systems integration alliance** to work together on software and hardware for mission-critical systems. Under the alliance, the companies will develop Fujitsu servers based on Intel's Itanium processors and Windows Server 2003 and next-generation operating system code-named Longhorn. Fujitsu also will place engineers in Microsoft's Redmond, Wash., campus and integrate .Net into its Triole software suite. The first system developed as a result of the alliance will be an Itanium-based server available in the first half of next year, Fujitsu says. Fujitsu says it expects to see worldwide revenue of \$7.2 billion by 2007 from sales of enterprise servers, software products and services as a result of the alliance. Their current alliance has reported revenue of \$2.2 billion in fiscal year 2002 and \$2.3 billion in 2003. Announcement of the deal comes less than a month after Fujitsu committed to work more closely with Sun through merging their Sparc processor-based server product lines by 2006. The Sparc-based machines compete with Windows servers.

■ **Decru** has announced its **storage security appliance DataFort** has received Federal Information Processing Standard 140-2 Level 3 certification from the U.S. National Institute of Standards and Technology. The FIPS 140-2 certification means that the DataFort appliance has passed the encryption and key management evaluations required by NIST and can be sold to federal government agencies that require FIPS 140-2 certification. DataFort pricing starts at \$30,000.

Zultys adds IP PBX clustering

■ BY PHIL HOCHMUTH

Zultys Technologies this week is set to announce a clustering technology for its IP PBXs aimed at letting users create resilient, high-scale VoIP systems using groups of small call servers.

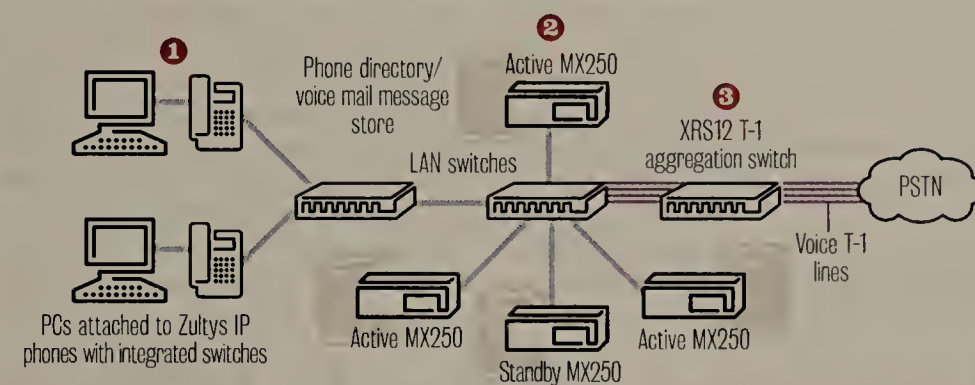
MXCluster could help Zultys users with MX250 IP PBXs increase their system capacity by linking multiple low-cost boxes, instead of upgrading to a high-end IP PBX from Zultys or other vendors, the company says. Tying together MX250s in a cluster also increases the failover capabilities of the device and public switched telephone network (PSTN) links.

Announced last year, the MX250 is a Linux-based IP PBX appliance that uses Session Initiation Protocol (SIP) for call setup and signaling. SIP is a VoIP call control and application protocol technology.

The box includes up to 200 hours of voice mail storage and can handle up to 250 attached SIP phone users. (Zultys makes a SIP phone, but the MX250 can work with any standards-based SIP endpoint, such as a Cisco or Pingtel SIP IP phone or Windows PC with the SIP-based Windows Messenger client.)

VoIP clustering

Zultys is adding clustering capabilities to its MX250 IP PBX, letting multiple devices act as a large redundant system.



1 Up to 1,000 users can attach to an MX250 cluster. Endstations see the system as a single image with one IP address.

2 Up to four MX250s can be clustered, with a single offline standby box for failover protection. Call processing is distributed among nodes in the cluster. System databases and voice mail storage are replicated across the nodes.

3 A Zultys XRS12 appliance aggregates up to 12 T-1 lines, allowing the cluster to share outbound PSTN access over an Ethernet link.

Version 2.2 of the MX250 operating system software allows two to four MX250s to link together to provide IP phone connectivity for up to 1,000 users. The cluster also combines the voice mail storage of the

separate systems into a virtual store of 800 hours of voice mail across the clustered systems' hard disks. The clustered systems have one IP address and share one user

See Zultys, page 16

Start-up crams more data onto WAN

■ BY TIM GREENE

Start-up Orbital Data is launching gear that it says boosts throughput on WAN connections 10 times or more by overcoming bottlenecks caused by the limitations of TCP.

Called Orbital 5500, the appliance is sold in pairs with one at each end of a wide-area link, where they optimize TCP sessions so transmissions fill the available pipe rather than sending at the slower speeds that TCP normally dictates.

TCP requires an acknowledgment of each packet, and if that acknowledgment is slow or fails to come, the sending machine throttles back its transmission rate, assuming the link is congested, even if it's not, the company says. Orbital says this can result in WAN connections running at only 20% of capacity because of packet loss across the link.

To eliminate this, the company uses a feedback mechanism between its devices so traffic is sent at the speed of the con-

nection. This is done using Orbital's own flow-, congestion- and retransmission-control algorithms and buffers in the boxes. When traffic is sent across a WAN, it is sent using standard TCP. Orbital Data calls its technology Total Transport.

Competition

Competitor Peribit Networks' WAN gear adjusts TCP receive-window size to maximize throughput across WAN connections. Peribit gear also compresses traffic. Start-up Aspera sells software that sends WAN traffic using a proprietary transport mechanism other than TCP. Riverbed Technology spoofs protocols to reduce the number of transactions necessary to complete a WAN transfer, thereby reducing the total number of packets crossing the connection.

Using Orbital 5500 boosted throughput for film production company Nice Shoes from 300K to 4.5M bit/sec — 15 times the throughput, says John DiMaggio, the New York firm's director of new media services. In addition to speeding up the traffic, the

Orbital 5500 devices can reserve bandwidth for traffic other than the large video files the company sends, DiMaggio says. To accomplish this, he has set the devices to max out at 5M bit/sec, so 1M bit/sec of bandwidth will be left even when sending video files.

One drawback is that the system requires a box at both ends, he notes, and if a business partner doesn't own one, Nice Shoes has to put up with slower speeds. The company has two Orbital Data boxes, and for big jobs, sends the second one to the partner. The devices are placed between the LAN and the WAN, and if they fail, traffic passes through as if they weren't there.

Orbital 5500 is managed via a Web interface on each device. Pricing ranges from \$12,000 for T-1 throughput to \$50,000 for 200M bit/sec throughput.

The company was founded in June 2002 and is funded by \$15 million from Sevin Rosen Funds and Redpoint Ventures. Its CEO, Richard Pierce, is the former COO of Inktomi. ■

TOLLY ON
TECHNOLOGYKevin
Tolly

Every product, according to its makers, is easy to use. And, for the folks who designed it, I'm sure it is.

But, say what they will, so many products that should be easy to use, just aren't. This "exasperation factor" — the sigh you heave when you hit that brick wall — undoubtedly causes many would-be buyers of a demo package just to leave, never to return. Still, vendors seem to be blissfully unaware of the opportunities that they are losing.

My recent experience with a claimed "enterprise-class" file replication package (which shall remain nameless) is characteristic of so many offerings today.

The package runs on Windows and provides, it says, "powerful, intelligent" features for mission-critical applications allowing

replication across LANs, WANs, VPNs — everything.

After working with the product for a few hours though, one has to wonder seriously if anyone outside of the development team ever gave input into its screen design, data-entry fields, message texts or status indicators. Dealing with the GUI was exasperating.

Even setting up a simple replication between two local servers required some unnecessary guesswork. Some examples:

When setting up the parameters for the source and target, there is a grayed-out field that reads "Select Share." Yet, when you specify a machine that has shares defined, the field remains inaccessible.

Just below it, for both source and target, is a field labeled simply: "password." Password for what? Help is no help, saying, in essence, "if a password is required, enter it here." One might guess that it means an Active Directory password but there is no field where a user ID can be entered. Exasperating.

One of the "advanced" features the prod-

uct claims is "bandwidth throttling." Yet it, too, is exasperatingly enigmatic. It reads: "Throttle connection at x%."

Throttle WHICH connection? I know I'm hooked up to a Fast Ethernet network that traverses an asymmetric DSL access across the Internet ending up on a T-1. I also realize that the software can, at best, be aware of the Fast Ethernet.

So, even if I put in 1%, I could theoretically by commanding my source to pour data out at a rate that could consume most of my T-1 if, as I believe, it is a percentage of the local LAN connection that is being requested.

Yet, when I tried to run this "job" using 1%, it just hung. In fact, its state has been "initializing" for two days now. I'd cancel it except I found out that the program doesn't implement such a command.

Many of these flaws could have been eliminated had ease of use truly been a concern of the vendor. Nothing drives up cost of ownership like a poor user interface.

And all of this leaves me wondering

whether the product is a "gem in the rough" or a piece of junk that has such architectural flaws that no user interface upgrade would make the product suitable for an enterprise environment. I shudder to think of having this program be the cornerstone of backup for any truly mission-critical data.

Fortunately for customers, the flaws reveal themselves early into a test drive of the demo version — before any real commitment has to be made.

But time for investigation is a scarce commodity in today's corporations. Buyers short on time who purchase such products on impulse are in for a rude awakening.

So despite all the praise vendors heap on themselves about ease of use and total cost of ownership, it still remains caveat emptor.

Tolly is president of The Tolly Group, a strategic consulting and independent testing company in Boca Raton, Fla. He can be reached at ktolly@tolly.com.

Appliance controls RFID traffic

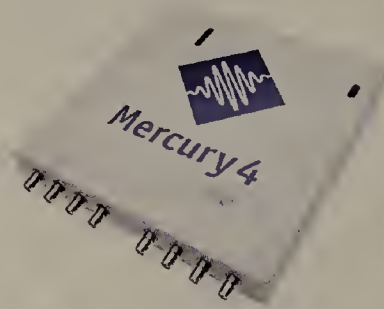
■ BY ANN BEDNARZ

As companies begin to scale their radio frequency identification implementations from pilot to production mode, gear brought online for reading wireless tags needs to be on par with corporate network standards.

In a production environment, RFID readers need to behave less like simple radio transceivers that pass along unfiltered data and more like network routers capable of routing data intelligently between systems. "An RFID reader can't be some weird thing that you can't authenticate or manage remotely," says Kevin Ashton, vice president of marketing at ThingMagic, a start-up that makes RFID readers.

To that end, ThingMagic last week announced the Mercury4T, an RFID reader that scans supply-chain items, such as cases and pallets of goods, for their electronic product code (EPC) and passes along the information to enterprise databases and business applications. (Managed by international standards body EPCglobal, an EPC is a unique identifier that can be associated with operational data, such as an item's origination or its production date.)

Similar to RFID readers from other vendors such as Applied Wireless, the Mercury4T is de-



The Mercury4T RFID reader features standard routing protocols and management capabilities.

signed to be deployed in settings such as a distribution center to improve supply-chain operations. From a fixed mount, it receives EPC data from up to eight antennas positioned nearby that capture tag information as shipments pass through loading dock doors, for example.

The Mercury4T contains a 266-MHz Intel network processor and embedded Linux operating system; it can capture, manage and process EPC data 100 times faster than ThingMagic's previous iteration, Ashton says.

What differentiates the appliance from other RFID readers is that it's designed to simultaneously read multiple tag variants, including high-frequency and UHF tags carrying an EPC, and tags that conform to international standards such as ISO 18000-6B and UCODE EPC 1.19.

For example, a company could deploy a dual-band version of the

Mercury4T that combines UHF and high-frequency ports. Multi-protocol support is critical, Ashton says. Different frequency tags work best on different products, such as liquids or metal items. In an enterprise setting, it's unlikely one kind of tag will suffice for every RFID application, Ashton says.

The Mercury4T speaks TCP/IP and supports standard network protocols, including Dynamic Host Configuration Protocol for configuring devices on a network; SNMP for performing remote diagnostics and management functions; and 820.11x for communicating via wireless LANs. A Web application powered by an on-board Web server controls tag read and write functions. Users can upload software to support new RFID tag protocols and frequencies as they become available.

ThingMagic included on-board general-purpose computing resources in the Mercury4T to let users build custom tag-filtering and analysis functions. Users can program the Mercury4T to prioritize certain traffic — such as data related to a shipment discrepancy, which might indicate a theft.

ThingMagic handles reader design; its partners Tyco International and Omron manufacture the readers and sell them for about \$2,500. ■

Zultys

continued from page 15

directory database.

Current MX250 customers now can add a few hundred users, without having to upgrade to a larger system such as Zultys' MX1200, a single system that supports 1,200 IP phones, says Iain Milnes, CEO and founder of Zultys.

MXCluster requires one stand-by MX250 server for clusters of two, three and four live IP PBXs. A single master node in the cluster distributes call processing and voice mail processing and storage across the cluster. Zultys says a cluster can be set up in less than an hour, and IP phones and PCs do not need reconfiguring when clustering more MX250s with an existing system (provided a MX250 acts as the master node in the cluster).

In addition to MXCluster, the company is introducing its XRS12 appliance for pooling voice T-1 lines and sharing bandwidth among MX250 boxes in a cluster. The XRS12 can consolidate 12 PSTN T-1 connections into one box and then share the lines among four MX250s in an MXCluster configuration. This lets PSTN lines remain live in case one of the nodes in the cluster fails.

Healthcare Billing, a Boca Raton, Fla., company, uses several MX250s in its central site and at remote sites around the state. The MX devices' quick setup

proved useful, says Corey Wilson, director of IT for the firm, which outsources hospital billing jobs.

During a recent office move, new MX250s were installed and brought up in a day, replacing a Lucent/Avaya Merlin key system used in the old office, he says. Wilson says he figures it would have taken at least three days to move and set up the older key system.

The MX250 competes with small-office IP PBXs such as 3Com's NBX, Alcatel's Omni-PCX, Avaya's IP Office, Cisco's CallManager Express and Nortel's BCM.

These vendors also offer clustering configurations for linking multiple small-office boxes.

An MXCluster configuration requires a spare MX250 and license, which costs \$6,000, and a XRS12 appliance, which costs \$1,800. Zultys' MXCluster software is available as a free upgrade to MX250 customers. ■



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Enterprise Applications

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Site: Lessons from leading users

Minn. portal provides statewide benefits

■ BY CAROLYN DUFFY MARSAN

The state of Minnesota recently launched a new feature on its Web site that helps citizens shop for lower-priced prescription drugs in Canada. Called RX Connect, this feature was created in just six weeks by non-techies, thanks to a Web portal strategy that makes it easier for state IT workers to update online content.

Minnesota's Web portal — dubbed

North Star — was built using BroadVision Portal software. North Star provides a single, citizen-facing interface to Web content created by 400 state agencies. Just 18 months after going live, North Star attracts 8 million hits per month, representing about 650,000 user sessions.

"The portal is a connector to all the agency content," says James Kauth, director of emerging technologies at Minnesota's Office of Technology. "One

of my efforts is to try to bring as many agencies to the portal as we can. We've been trying to show that moving to a centralized content management solution has its benefits."

Deloitte Consulting won a contract in 2001 to build North Star using BroadVision's Portal software. North Star also provides integration with Netegrity Web authentication, iPlanet Lightweight Directory Access Protocol directory services, WebSphere application server soft-

ware and MQ Series transport. The portal also features Verity's Ultraseek search engine.

Altogether, Minnesota has spent \$1.6 million to create North Star. State officials say they now are yielding ROI because they can quickly and inexpensively respond to new policies with features such as RX Connect.

"RX Connect was created by three people [people] from the state's

See Minnesota, page 18

Short Takes

■ **Softricity** this summer will ship an enterprise version of its **SoftGrid** application management software. Softgrid translates, via its Sequencer program, Windows applications into a set of files that are stored on a central server with SoftGrid's virtual machine program. The virtual machine and only the files needed to launch the application are served to a PC when the user clicks on the desktop icon. The application runs in this protected mode, without ever installing on the Windows client. The enterprise version replicates changes made to a central SoftGrid server to remote SoftGrid servers. The new version costs \$10,000 for the server, \$3,000 for the Sequencer, \$190 for each Windows client.

■ **Sun** is releasing the source code for a user interface technology that gives users a 3D view of their PC desktops, part of an effort to drive greater use of Java on PCs and other client devices. Called **Project Looking Glass**, it was first shown a year ago. With Looking Glass, application windows are translucent and appear to hover on the screen. Users can stack, rotate and flip the windows. Looking Glass is for PCs running Linux and Solaris. Sun plans to release Looking Glass in the coming months.

Mgmt. vendors make good on acquisitions

■ BY DENISE DUBIE

Enterprise network managers could benefit from a flurry of acquisitions in which network management veterans BMC Software and HP separately bought leading-edge technologies and integrated the wares into their software suites.

Management software vendors that promise to automate data center operations, virtualize computing resources and manage IT to support business services have one thing in common: They need to fill technology gaps in their product offerings. Many have done so through acquisition; HP in the past year has acquired 11 companies.

"Talking about what the new technology can do for BMC or HP customers is all theoretical until [the vendors] do the integration work and get products out," says Stephen Elliot, a senior analyst with IDC. "But several management vendors have been strategically filling gaps in their product lines."

Take BMC, for example. The company's September 2002 and March 2003 acquisitions of Remedy and IT Masters, respectively, kicked off the company's business services management (BSM) initiative, in which BMC says its software will help customers manage IT infrastructure and application performance directly in relation to a pre-defined business service.

The company also will integrate change and configuration management technologies acquired in March when BMC purchased Marimba. The technology will help users build topology maps of assets, collect

configuration data and correlate it with business service performance goals.

Three software applications — Topology Discovery, Configuration Discovery and Discovery Express — work with a Configuration Management Database, which

mainframes and desktops to also populate the database with configuration data.

Peter Pace, manager of change management for United Airlines in Elk Grove Village, Ill., says his IT team uses Remedy's Change Management (now part of BMC)

Buying spree

In the past two years, BMC spent more than \$375 million to fill out its Business Service Management product suite.

Date:	September 2002	March 2003	December 2003	April 2004
Acquired:	Remedy	IT Masters	Magic software division of Network Associates	Marimba
Technology:	Help desk, asset, service and change management software.	IT service modeling and visualization software.	Help desk and service management software.	Desktop and server change and configuration management software.
Price:	\$350 million	\$42 million	\$47 million	\$239 million

the company says will let users keep an up-to-date record of device, server, application and desktop configurations and automatically track changes.

Topology Discovery and Discovery Express look at the registries on desktops and servers to establish an inventory and build topological maps. While the express version simply pings machines to gather information, Topology Discovery creates relationship maps among the servers and desktops and populates the database with topology information. Configuration Discovery collects data from devices, servers,

software to track changes made across 200 servers. And he says that "it's just a matter of when" the company can implement BMC configuration management tools to augment its change-control process.

"Change management provides a level of control and discipline throughout the IT organization," Pace says. "It enables the review and communication of changes so that we can fully understand the potential risks and impact as the changes are implemented."

Configuration Discovery is slated to be **See Acquisitions, page 18**

'NET
INSIDERScott
Bradner

The U.S. National Weather Service currently is running a neat little data service that is an almost perfect example of what I want a tax-funded government agency to provide. But not everyone is a fan of this type of thing; at least one group would have you pay twice for the same information.

A number of government agencies provide very useful data services to the public. Three examples are: the U.S. Patent and Trademark Office, which maintains a Web site where one can read patents and patent applications (www.uspto.gov/patft/); the Library of Congress, which among other things runs the "Thomas" Web site, where you can gain access to the full text and status of federal legislation (<http://thomas.loc.gov>); and the U.S. Supreme Court, which puts the text of its opinions online (www.supremecourtus.gov). There are many other examples of this "information to the people" movement that started a few years ago.

Is paying twice better?

The National Weather Service has provided lots of weather-related information through its Web site for years (www.nws.noaa.gov). Its latest project is an experimental XML-based service that lets an Internet-connected end user send a query containing the latitude and longitude of some location, the start and end times of a measurement window and a list of desired information. The service then extracts the information from the database that the weather service uses to create its forecasts and returns the information requested. This can include temperature, wind, cloud cover, snowfall amount and likelihood of precipitation over the next 12 hours. The data is returned in XML and can be parsed by a simple program and displayed on the user's computer

screen (see <http://weather.gov/xml/>). The weather service is asking for public comment on this service before Aug. 1. The organization will evaluate comments to see if it should make the service permanent.

You might wonder who would not want such a service. All of the services I mentioned supplant private-sector services that provided access to the government information for a fee. Naturally, the companies providing the fee-based access were not thrilled that you and I could bypass them to get the information directly. It's not much of a surprise to hear that the Commercial Weather Services Association (www.weatherindustry.org) is not all that happy about the National Weather Service providing too much data to the public because the CWSA "is the trade association for the professionals who make weather their business," the group's Web page says.

The association is fighting recommendations that the National Weather Service put more of its data online for the public. Such recommendations were made in the

National Research Council's report, "Fair Weather: Effective Partnerships in Weather and Climate Services" (go to www.nwfusion.com, DocFinder: 2727).

The CWSA thinks this type of data should go through a commercial weather company before it gets to you, and, because the company needs to make money, it wants you to pay (again) for the data in some way.

It is doing just what it should: Looking out for its members' welfare rather than what is best for all of us. But in this case I think the association is being shortsighted: Just because I can see the information on my screen does not mean that I won't check out Weather.com.

Disclaimer: Many at Harvard pay twice, once as a student then again as an alum, so the above desire to not pay twice does not represent a university view.

Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.

In Site: Lessons from leading users

Minnesota

continued from page 17

Department of Human Services in just six weeks," Kauth says.

"The Governor's Office established the requirements. The Web portal was tied into a database listing all of the prescription drugs available from licensed pharmacies in Canada. We did user testing, and it was all accomplished in six weeks," Kauth adds.

Kauth says that before North Star was launched, the Department of Human Services would have had to hire several people including a technical developer and several graphic artists to create the RX Connect content, conduct the necessary user testing and add metadata for search engines.

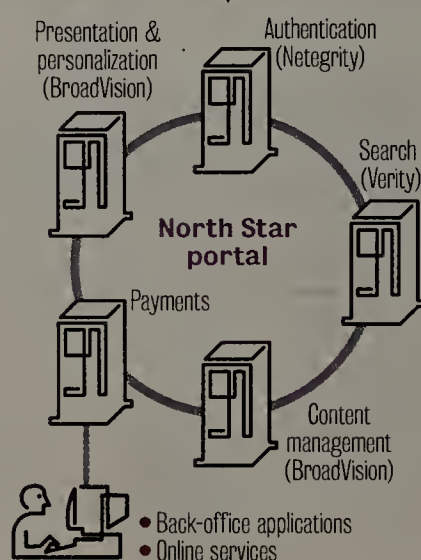
"RX Connect is indicative of the change in culture in terms of how we build Web sites in Minnesota," Kauth says. "Typically, an agency would have to hire a Webmaster to make the Web site look professional. What we're able to do is eliminate that step from the process."

North Star is now at the center of a statewide IT strategy that involves increasing the delivery of government services online. Minnesota Gov. Tim Pawlenty and Lt. Gov. Carol Molnau announced in April a plan to better align the state's technology investments with its business objectives. The Pawlenty-Molnau Plan says that by the end of 2006, the amount of state business conducted online will include 90%

Great white north

Minnesota's \$1.6 million North Star Web portal provides a single, citizen-facing interface to Web content created by 400 state agencies.

North Star uses BroadVision Portal software for content and presentation management.



North Star integrates with online services offered by individuals including eLicensing, which supports seven license renewals including real estate, insurance and cosmetology licenses.

of the citizen-to-government transactions, 70% of business-to-government transactions and 50% of government-to-government transactions.

"Our Web portal is likely to be the distribution point for information about the Pawlenty-Molnau Plan as well as

being a core integration component," Kauth says. "For example, we'll be looking at an enterprisewide, online, license renewal system for real estate, insurance and cosmetology licenses. That will be hosted on North Star."

Minnesota's Office of Technology supports North Star with a staff of seven, who coordinate with another 60 or so content contributors from the various state agencies. In addition to the North Star portal, this group also is responsible for hosting 12 agency Web sites.

Kauth credits BroadVision Portal with helping make his North Star team efficient. "BroadVision's tool set is sort of the heartbeat of North Star," Kauth says. Because of the investment in North Star, "we've been able to do all the things we were doing before, but now we can do them faster and connect citizens more quickly with the information they're looking for while sustaining staff reductions."

Now that its citizen-facing Web portal is so successful, the Office of Technology is creating a similar portal for state employees. Two weeks ago, Minnesota added a feature to its internal Web site to help state employees buy reduced-cost prescription drugs from Canada.

"The biggest challenge for us is the culture. State government has typically been a silo-filled environment, where individual agencies control their own IT budgets," Kauth says. "[What we're doing with North Star] is requiring that agencies work together and collaboratively." ■

Acquisitions

continued from page 17

made available this month, Discovery Express is expected to be available in early fall, and Topology Discovery should be available later this fall. Pricing will be determined when the products become generally available.

Separately, HP last week also made news around a recent acquisition. The company announced new identity management software that will automate adding a new user, including tasks such as assigning privileges to application and computing resources, setting up a phone extension and getting a desktop PC.

OpenView Select Identity is the result of HP's March acquisition of TruLogica. The new software will join HP's identity management suite, which also includes OpenView Select Access, software announced last fall and built on technology HP acquired from Baltimore Technologies.

HP says bringing business process-related information into the identity management systems will let the software automatically assign resources based on patterns.

"We call it contextual identity management. We model the infrastructure, the users and the assets and then based on changing information, the software can automatically move a user into a group with specific application resources," says Andrew Flint, product manager for HP OpenView Select Access.

Pricing for HP OpenView Select Identity starts at \$75 per user, with volume discounts available. ■



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University graduating to wireless net

■ BY DENISE PAPPALARDO

American University is on the verge of pulling the plug on its traditional wired voice network for students.

The Washington, D.C., university embarked on an ambitious plan two years ago to offer students discounted wireless phone service and access to a campuswide wireless LAN (WLAN). This strategic move puts the school in a position to reduce telecom costs and simplify its VoIP plans.

In early 2001 the university decided it wanted to offer students and faculty a fully integrated voice and data wireless network, lower network maintenance costs and reinvigorate a revenue stream.

In the heyday of its earlier telephone network, the school brought in \$500,000 from reselling long-distance service to its population of about 3,500 students living on campus. By 2000 that number had dwindled to \$164,000, says Carl Whitman, executive director of e-operations at AU. With the proliferation of cell phones and online chat, AU accurately predicted back then that its revenue would continue to fall.

So it teamed with BearingPoint (formerly KPMG Consulting), which helped the university come up with a plan to offer reliable wireless phone service that could be easily coupled with access to the WLAN.

That's where MobileAccess Networks came in. The university deployed the MobileAccess System Architecture, which includes a ModuLite Base Unit that connects to a wireless service provider's base station on one end and an MA-1000 Remote Unit on the other end. The remote unit converts cellular signals from optical to electrical radio frequency for transmission over AU's Gigabit Ethernet network.

The university's Cisco 1200 access points also are connected to the MobileAccess remote unit. The unit then transmits cellular and Wi-Fi signals over AU's network to passive antennas that are deployed on every floor of every building on campus.

"If we were going to move to wireless, we had to offer service that was on par with [landline] phone service," Whitman says. And that's what the MobileAccess system provides, he says.

"One hundred percent of the campus is

wireless-enabled," Whitman says. The university's campus includes 45 buildings on 84 acres in downtown Washington, D.C. The university has 640 passive antennas and 190 Cisco 1200 access points deployed.

While expanding its network, the university also struck a deal with Cingular Wireless and then about a year later with T-Mobile. While Whitman did not provide the details of either deal, AU does benefit financially when students sign up for service.

The university has invested \$3 million to wirelessly enable its campus.

"Our current plan is to disconnect [wireline] long-distance service in the residence halls by September 2005," he says. "The kids already have wireless phones and with local number portability they can easily keep their numbers and port to Cingular or T-Mobile."

This will let Whitman reduce the cost of supporting and maintaining these lines

and PBX switches, and eliminate future capital costs of maintaining a telephone system for the residence halls.

Lessening student dependency on their wired phones was also a critical step in reducing the complexity of Whitman's planned VoIP deployment.

"Getting out of the long-distance business is reducing the size of my IP telephony deployment. It will in fact cut it in half," Whitman says. Instead of looking at deploying 7,000 IP phones to students, staff and faculty, Whitman anticipates deploying about 3,500 to only faculty and staff.

He says he can see a time where new voice applications might drive the need to deploy VoIP to the students. He does not anticipate deploying IP phones to each dorm room, but instead he sees students using their PC as the telephone interface. For now Whitman is reserving VoIP for faculty and staff. ■

EYE ON THE CARRIERS

Johna Till Johnson



Struggles over spectrum will bring great change

propagation goes shorter distances with the same amount of power. So wireless devices operating in the 900-MHz spectrum could go through walls, for example, that Wi-Fi devices can't penetrate.

But "better than Wi-Fi" isn't the real value proposition. If 900-MHz spectrum became reliably available across the country, service providers could offer functional broadband wireless access — bypassing the need for local exchange carriers (LEC). In theory, businesses could have access to low-cost, secure, highly reliable voice and data services without ever needing to involve the incumbent LECs.

Naturally, the idea of re-allocating spectrum from broadcast TV to broadband wireless is stirring up resistance from the obvious players. First are the television broadcasters who worry about the effect on their revenue. As Edward Fritts, CEO of the National Association of Broadcasters, reportedly said, "We have serious concerns that the introduction of unlicensed devices into the television band could result in unforeseen interference in broadcast service to millions of television viewers." (Translation: We'd lose our markets.)

Also predictably cagey are the RBOCs, which are smart enough to figure out that

broadband access poses a threat to their death grip on the copper local loop. In a separate but related case, the FCC agreed to release 1.9-GHz spectrum to Nextel, the sixth-largest wireless company, in exchange for receiving back some of Nextel's 800-MHz spectrum for use by firefighters and other emergency services, which desperately need it. Verizon and Nextel's other competitors predictably whined about the federal spectrum "giveaway" (I guess Verizon's the only company entitled to government handouts.) FCC-watchers and pundits are predicting that Verizon et al. will sue the FCC to prevent them from concluding the deal — thus depriving the country of necessary emergency services.

But I digress. The real point is that despite strong resistance from the legacy users of spectrum, the FCC is dipping a toe into the waters of wholesale spectrum re-allocation. Even a modest move in this direction could have profound consequences for service offerings in the next 10 years. To see how, stay tuned.

Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johna@nemertes.com.

Short Takes

■ Last week Washington, D.C., and New Jersey became the latest locales to **outlaw the use of wireless handsets while driving**. They join New York in requiring hands-free cell phones for motorists. In Washington, D.C., violators will face a fine of \$100 after a 30-day grace period. In New Jersey, violators will receive a fine of up to \$250. In New York, talking on a standard cell phone while driving carries a fine of up to \$100. While the laws are similar, in New Jersey drivers cannot be pulled over only for talking on their cell phone. In Washington, D.C., and New York, drivers can be pulled over for talking on cell phones. New York was the first state to enact such a law in 2001.

Spectrum allocation probably isn't a top-of-mind issue for you at the moment — but you might want to start paying attention. Plans currently under discussion could dramatically affect the availability of broadband wireless products and services to corporations and consumers.

In May, the FCC adopted notice of proposed rulemaking suggesting that unused spectrum allocated to television be made available to wireless devices and service providers. These would include low-power personal portable devices, such as PC cards, and higher-powered fixed location devices, such as the wireless broadband Internet access base stations.

The advantage that such products and services would have over current technologies — such as Wi-Fi — is, quite simply, propagation ability. Spectrum in the TV band, which is below 900 MHz, is better able to penetrate objects than the spectrum in the 2.4-GHz to 5-GHz region (where most Wi-Fi devices operate). Remember, there's an inverse correlation between frequency and distance — higher-frequency

Net Worker

■ PRODUCTS, SERVICES AND STRATEGIES
FOR TYING TELEWORKERS TO THE ENTERPRISE

Congress targets telework slackers

■ BY TONI KISTNER

Congress finally is fed up with the federal government's dismal telework performance.

The House Appropriations Committee recently approved a spending bill that withholds \$5 million from the budgets of the departments of Commerce, Justice and State until they prove they let their eligible employees telework.

If passed, the FY 2005 Commerce-Justice-State (CJS) Appropriations bill also would withhold funds from the federal judiciary, the Small Business Administration and the Securities and Exchange Commission if they can't prove eligible employees are teleworking. The bill also requires agencies to designate a telework coordinator and provide quarterly progress reports to the Appropriations Committee.

"I am hoping this will serve as an incentive to allow more federal workers to telework," said Rep. Frank Wolf (R-Va.), chairman of the CJS Appropriations subcommittee in a statement. "With all the advances in technology today, there is just no reason to strap yourself in a metal box every morning only to drive to an office where you sit in front of a computer all day."

"The federal government needs to set the standard for the nation," Wolf said.

The FY 2000 appropriations bill required 74 federal agencies to let 100% of eligible employees telework from home or a telework center at least one day per week by

2005. But today, only 6% of the 1.7 million federal employees covered by the mandate telework, according to the report from the Office of Personnel Management (OPM), released in March.

In the report, OPM Director Kay Cole James said telework is a critical component of agencies' continuity of operations programs and essential for "volatile situations" such as mass demonstrations and that "telework allows the federal government to remain responsive to the nation at all times."

A second lawmaker has grown frustrated with agencies' failure to meet telework goals. Rep. Thomas M. Davis III (R-Va.), the House Government Reform Committee chairman, has scheduled a hearing for July 8 on the issue.

Davis is expected to ask a mix of federal agencies and private sector companies to testify. Sources say the list includes OPM and the General Services Administration — both charged with telework outreach and training. Companies with stellar telework programs such as Sun, AT&T, Cisco and Nortel also could be called.

The day after the Appropriations Committee's spending bill was approved, OPM hosted a telework training session for the 16 federal agencies reporting less than 2% compliance with the law. The session included a roundtable discussion of the lat-

Federal telework report card

Here are some of the best and worst agencies for telework. The chart compares the number of eligible employees to the number who actually telework. The last category shows how close each agency has come to meeting the government's mandate that 100% of eligible employees be allowed to telework.

Agency	Number of employees	Number eligible	Number teleworking	Percent compliant
Worst:				
Dept. of State	18,310	11,558	170	1.4%
Dept. of Homeland Security	53,025	25,803	392	1.5%
Small Business Administration	3,138	3,120	268	8.5%
Securities and Exchange Commission	3,279	3,279	313	9.5%
Dept. of Transportation	58,487	27,078	2,695	9.9%
Best:				
Dept. of Energy	14,516	1,437	1,437	100%
Nuclear Waste Tech. Review Board	16	15	15	100%
Pension Benefit Guaranty Corp.	790	339	339	100%
Dept. of Treasury	108,533	43,433	30,498	70.2%
Office of Personnel Mgmt.	3,606	2,898	1,542	53%

est telework trends and inhibitors.

"The only way to increase telework utilization is to continue educating employees and managers about telework's ben-

efits," OPM's James said in a statement. "As a federal team, we must continue to create a culture that embraces the idea of telework." ■

Surviving the DNC with telework tools

■ BY TONI KISTNER

The 2004 Democratic National Convention Web site includes "alternate routes" for Boston-area commuters to take during the event. But the smartest route is down the hall to the home office.

Major arteries including parts of Interstate 93 and Route 1, and the Sumner Tunnel and Tobin Bridge, will close after 4 p.m., potentially stranding commuters. Boston's North Station also will close.

Downplaying the problem, DNC chairman Terry McAuliffe expects the 35,000 delegates, media and attendees to stay near the convention site, traveling primarily by bus or on foot. But Boston Mayor Thomas Menino is urging area firms to let employees telework, work staggered hours or just stay away. Many might heed that last option: Of the 1,600 Boston-area residents surveyed by travel retailer Vacation Outlet,

77% say they will leave town on vacation during the convention.

Metropolitan Boston DSL provider Verizon doesn't anticipate problems handling an increased load of home workers during the convention, although a company spokesperson says he expects those who rely on a dial-up connection those days will have their interest in DSL "piqued."

To encourage telework and get some attention, three local companies are offering their services for free. During the week of July 26, NetSpoke will give new customers a seven-day free trial of its Web conferencing service, which includes the first audio call. Service includes unified audio and videoconferencing, reservation-less audioconferencing, conference recording, transcription and archiving.

Intranets.com is offering its collaboration service free through Aug. 31. The service lets users share documents, schedule meet-

ings, post announcements, assign tasks and conduct online meetings. The deal includes 300 free audioconferences, and the company plans to donate any related profits to two Boston homeless shelters.

Phil Montero, Boston telework trainer and consultant, negotiated with Citrix to offer free unlimited use of remote desktop access service GoToMyPC through July 31. The service gives users all the applications and data on a host system from any Web browser. The offer is open to everyone who signs up at Montero's YouCanWorkFromAnywhere.com Web site. ■



More online!

Related stories are available at:

DocFinders: 2728, 2729, 2730 and 2731.

Short Takes

■ **The Digital Living Network Alliance**, previously called the Digital Home Working Group, recently announced its **Home Networked Device Interoperability Guidelines** — a set of specifications it recommends companies use to move content among consumer electronics, PCs and mobile devices over a wired or wireless network. DLNA backs IP, HTTP, Universal Plug And Play and Wi-Fi, and has more than 140 members, including Intel, Microsoft and Sony. DLNA-certified products are expected by mid 2005.

Technology update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

APM pinpoints service problems

■ BY TOM MURPHY

One of the biggest challenges facing IT departments today is delivering higher service levels for critical applications. Undiagnosed problems associated with poorly performing applications can cause unnecessary staffing and hardware upgrades, unachieved business goals and missed opportunities, all of which affect a company's bottom line. To meet these challenges, IT departments rely on application performance management software to improve services while reducing infrastructure costs and management overhead.

APM software improves interaction between applications and network components that support them. It gives network administrators more insight and visibility into their IT infrastructures. This knowledge helps them better manage application performance by identifying potential bottlenecks and fixing them before the problem areas degrade service levels.

The software, which can detect current, past and future application bottlenecks, drills into the application tiers to find a

problem's root cause. It can improve application and end-user productivity by identifying and solving problems before they become severe.

Detection and diagnosis

Today's application environments are increasingly complex, multi-tiered, distributed infrastructures. APM works in a variety of application environments to provide information about supporting tiers, which can be a mix of Web, storage, application, database, network and client servers.

APM detects bottlenecks through low-overhead agents that are installed on each server and supporting tier to be monitored. The agents gather applications' performance metrics in real time and store them in an APM database to measure the baseline performance of the various functions of the application environment. The baseline information then can be used to monitor performance against desired service levels.

When application performance begins to degrade, APM software detects the problem and notifies IT staff via pager, telephone or on-screen network alert. IT staff then can use a Web browser-based GUI to navigate the alerts page, through the tiers of the application, to the lines of code where the problem typically resides.

Typical problems APM detects include database-tuning issues, poor server response time, poorly written software code and problems communicating between application tiers. Once the cause of performance degradation within a technology tier is identified, APM technology can generate tuning advice, based on the

■ HOW IT WORKS

Application performance management

APM software helps IT departments deliver the application service levels users require.

1. APM software alerts IT staff to a problem that is beginning to degrade application performance.
2. APM software drills down into application tiers to find the problem's root cause.
3. APM software provides advice to help IT fix problems quickly before end users are affected.
4. APM database continually archives real-time performance metrics.
5. IT can use APM to generate reports on application performance.

application's historical performance, to resolve the problem. For example, creating a database table index might solve the problem of time wasted on full database table scans. Or, the tuning advice might show that connection pool size between a Java 2 Platform Enterprise Edition tier and a database tier needs to be increased. The information is stored in a performance warehouse on the APM server, and serves as the basis for reports IT administrators can generate for capacity planning.

Because performance problems tend to

come and go as a result of the nature and volume of transactions, IT staff needs to be able to analyze past performance as well as real-time performance to understand trends. By doing so, IT departments can take a more preventive approach to managing performance bottlenecks, which can drastically improve their companies' overall investment.

With business applications seeming to grow by another tier every year, APM will soon go from IT requirement to data center necessity. Future uses of this technology will extend its visibility into application performance and usage patterns, driving business efficiency through enhanced management of asset utilization, application usage and cost allocation.

Murphy is director of application performance management product marketing for Veritas Software. He can be reached at thomas.murphy@veritas.com.

Got great ideas

■ *Network World* is looking for great ideas for future Tech Updates. If you want to contribute a primer on a specific technology, standard or protocol, contact Amy Schurr, senior managing editor, features (aschurr@nww.com).



More online!

Consult our Technology Insider on application management to learn what network executives from leading companies are doing to overhaul application performance. You'll also find an overview of popular point products and a Living Buyer's Guide to network configuration tools.

DocFinder: 2735

Ask Dr. Internet

By Steve Blass

My PC seems to have been infected with something that has taken over my Internet settings. The Internet Explorer home page has been changed to a search site, and I can't set it back. Every time I connect to the Internet, my screen gets filled with pop-ups (many pornographic), and I can't make them go away. My anti-virus software is up to date but doesn't find anything to remove. I tried Spybot and Ad-aware, but neither of them have solved the

problem. Any ideas?

It sounds like you have been compromised by the Cool Web Search bar or one of its variants. There are tools to help clean your system. Get the Cool Web Search Shredder at www.nwfusion.com, DocFinder: 2736. This will try to remove all the registry entries and files associated with the Cool Web Search bar. If Cool Web Search Shredder fails to run when you start it, you may

need the Cool Web Search Smart Killer removal tool (DocFinder: 2737); run that to disable Cool Web's ability to kill the Shredder removal tool. Once you have regained control of your system, go to DocFinder: 2738 to learn how to prevent similar browser hijacking problems.

Blass is a network architect at Change@Work in Houston. He can be reached at dr.internet@changeatwork.com.

GEARHEAD INSIDE THE NETWORK MACHINE

Mark
Gibbs



Once upon a time, there were only Unix machines on the Internet. No, really, you could look as hard as you liked and all you would find were *nixen from wall to wall.

Anyway, in those far-off days, we had tools such as rsh (remote shell), rlogin (remote login), telnet and FTP so we could sit at one machine and use the facilities on another. Now all was well in the online kingdom and the neighborhood was generally genteel and academic. However, this was not to last. Oh, no.

In next to no time the rowdy barbarians appeared — the commercial elements moved in along with the hackers, the whackers, the spammers and the phishers. The result was that the 'Net was no longer a nice, safe neighborhood where you could let the kids — your users — play with their friends where they pleased. No longer could you expect them to turn up before dark, tired and ready for dinner with nothing more than a few scrapes and

Secure communications with SSH

bruises to show for their adventures.

Now when they set off, any bad guy with enough smarts to listen out for idle, unguarded chatter could steal their account names and passwords. By the time the little ones got home, their piggy banks and your wallet could easily be emptied, your living room defaced and your property hijacked for any number of nefarious purposes. A sad, sad state of affairs.

So how to protect the kids? The answer was ... Secure Shell (SSH).

SSH provides an encrypted communications channel between a client and a server over TCP/IP connections. Using SSH you can safely log on to a terminal session on another computer, and no one can "listen in."

Originally the protocol was only for *nixen and Vaxen. But that quickly changed and versions for other operating systems appeared. Today, we have a number of "industrial-quality" implementations (as in being commercially supported) from which to choose.

So what does this paragon of privacy provide? To start with, SSH prevents IP spoofing — that's when a remote host sends forged packets to appear to come from another, trusted host. It also prevents DNS spoofing, which is when an attacker forges name

server records. It also prevents the interception of clear text exchanges (passwords and other data) and data manipulation using intermediate hosts. The only thing bad guys can do to SSH communications is force SSH sessions to disconnect.

But just like watching a Ginsu knife being pitched on TV, you must wait! There's more! Not only does it slice and dice but turn it over and it's a chain saw!

Yes, folks, along with safe terminal access SSH gives you secure file transfer, provides secure X connections and supports secure forwarding of arbitrary TCP connections. It is the communications equivalent of a secure Swiss Army knife.

Under the hood, SSH implementations are based on the SSH1 or SSH2 protocol — the latter being a more secure and complete rewrite of SSH1. These two versions are very different from each other and incompatible. SSH2 is the standard used in most commercial implementations today, and its IETF drafts can be found at www.nwfusion.com, DocFinder: 2739.

The SSH protocol is founded on a secure transport protocol. This low-level functionality provides strong host-based server authentication, and optionally, compression. On top of this is the connection protocol that multiplexes channels over the

encrypted tunnel created by the transport protocol.

The final component is the client authentication protocol, which must be distinguished from a user authentication protocol to verify the identity of a user — a service that has to be added on top of SSH.

The goal of SSH was to support parameter negotiation for the key exchange method, the public key algorithm to be used, the message authentication algorithm and the hash algorithm while minimizing the number of protocol exchanges. Under SSH, data integrity is assured by including a message authentication code based on a shared secret, the packet sequence number and the packet contents.

For encryption, SSH2 supports AES, Triple-DES, Blowfish, Twofish, Arcfour and Cast128-cbc, and for authentication it employs passwords, public keys, digital certificates, smart cards, PAM and SecurID methods.

Which leads us to next week's Gearhead topic: SSH Tectia from SSH Communications Security (DocFinder: 2740), a suite of SSH products supported under Linux, AIX, Solaris, HP-UX and Windows.

Discuss your secrets with gearhead@gibbs.com.



CoolTools

Quick takes
on high-tech toys
By Keith Shaw

The scoop: TuneCast II, from Belkin, about \$50.

What it does: Like a good Hollywood sequel, the TuneCast II takes the good parts from the first version and adds features to improve the product. The device connects to the headphone jack of any MP3 player and broadcasts the content to any nearby FM stereo receiver. This lets users listen to their digital music when they're in a car or via a stereo system.

Why it's cool: The device lets users choose the frequency at which to broadcast, as opposed to a choice of only four pre-set frequencies in the earlier model. This gives users more flexibility, on the off chance the lower frequencies on the radio dial are taken up by college radio or public radio stations. This feature also comes in handy when you're driving — when you're in range of a station, you can quickly change frequencies to continue listening to your music.

Grade: ★★★★★ (out of five)

The scoop: 256MB + Wi-Fi card, from SanDisk, about \$130.

What it does: This secure digital I/O (SDIO) card combines 256M bytes of storage capacity with a Wi-Fi (802.11b) wireless LAN radio. The card works with Pocket PC 2002, 2003 and Windows Mobile 2003 handheld PDAs to provide wireless connectivity (and to give extra storage space). Security features such as Wired Equivalent Privacy, 802.1X, pre-shared keys and Wi-Fi Protected Access are supported.

Why it's cool: Combining the two technologies onto one SDIO card can save a lot of time as well as battery life. (SanDisk says combining the storage and wireless functions onto one card will help minimize battery drain.) More importantly, the combination lets you store content on the card while maintaining a wireless connection, as opposed to switching between a wireless radio card and a storage memory card. Installation was relatively simple (we had to install drivers and software before inserting the card into the handheld), although we had to remember which operating system our handheld was currently using.

On the down side, the card won't work with SDIO card readers, so it becomes a bit more difficult to transfer data stored on this card. Still, if you're looking to add wireless to your pocket PC without sacrificing storage memory, this card is worth a look.

Grade: ★★★★★

The scoop: Viewpoint Toolbar 2.0, from Viewpoint, free.

What it does: Like several other Internet Explorer toolbars, the Viewpoint bar is a plug-in that helps you quickly search for items on the Web.

Viewpoint adds a visual element to the search results, letting you see a thumbnail photo of a Web site in a hor-



SanDisk's SDIO card lets you store content while maintaining a wireless connection.

izontal scrolling window. When you roll your mouse over the thumbnail preview, the window gets slightly larger so you can see more. This lets you decide whether to continue to the site or go to the next search result. The toolbar also takes your favorites file and creates a visual representation of all your bookmarks.

Like other toolbars, the Viewpoint model includes a pop-up blocker, but instead of just blocking ads it throws them into a visual folder, so you can scroll and see what pop-up ads you're missing.

Why it's cool: Sometimes reading descriptions of your search results isn't enough; sometimes you want to see what the site looks like before you go there. In that respect, the Viewpoint Toolbar succeeds in saving you from wasted clicks.

Our favorite part of this toolbar was the visual bookmark feature, which lets you refresh the page and see if there is any new content.

If you scan a bunch of Web sites daily, setting it up so you can scan all of the sites at once (at a quick glance) is pretty valuable.

Grade: ★★★★★

Shaw can be reached at kshaw@nww.com.

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ON TECHNOLOGY

Michael Cooney

Offshoring, the monster that won't die

Few IT topics stir so much emotion, angst, fear and misunderstanding than offshore outsourcing.

Rarely a day goes by without some group putting out a new study on the subject. One concludes offshoring is purely the devil's work that will make the U.S. fall into the sea. The next will show companies moving work offshore are saving billions of dollars and benefiting from it so much that they wish they had done it sooner.

We came across the same schizophrenia in our reporting for this special issue. Many companies didn't want us to say they were using offshoring, while others were more than happy to tout the practice. Some would talk but wouldn't let us use their names — there's a stigma attached, they said.

Meanwhile the topic has hit the mainstream, with federal and state governments weighing in to restrict offshoring. Add to that the presidential election rhetoric, and it's not hard to understand the confusion that surrounds the topic.

We hope this package will help clarify some of the issues by examining the major offshoring topics.

In our lead story we look at the reasons there is such a dichotomy of views on the subject and look at the reasons companies are offshoring — or not. On the pro side there are important motivations, not the least of which is cost savings. But in a separate piece we look at the downsides, which include everything from language barriers to lost business.

While much of the offshoring discussion has swirled around India, we have a story about emerging countries such as Belarus and Estonia that would like to land that business. That could mean more savings, but infrastructure problems might be insurmountable.

Back in the U.S. we take a look at how offshoring has become a political hot potato. New regulations on the state level are making it difficult for state IT work to be outsourced. Can federal regulations be far behind?

Finally, our package concludes with two industry executives debating whether offshoring's benefits outweigh its drawbacks.

A Gartner analyst recently predicted that offshoring will lose its stigma in a couple of years because the market will mature and the emotional baggage will fall away. While the furor and FUD might die down, it will take years for those who lost their jobs to forget. This topic will remain an emotional issue for some time to come.

— Michael Cooney
Associate news editor
mcooney@nww.com



Spyware solution

It was interesting to read Mark Gibbs' Backspin column on spyware (www.nwfusion.com, DocFinder: 2722) and the many letters you got in response (DocFinder: 2125). Like other respondents, my company is spending more and more time cleaning spyware from customer computers. We're making a concerted effort to educate our clients about the risks.

I was surprised that no one mentioned the best solution to the spyware problem: Break out of the monoculture. Simply dumping Internet Explorer and using the excellent, free Mozilla Web browser eliminates a major attack vector.

My company has taken a more radical step and uses Mac OS X for our primary desktop environment — native Microsoft Office applications, 100% uptime with virtually no maintenance, no viruses and no spyware. It's a no-brainer — I don't have time to deal with Windows problems in my own backyard.

Park Hunter
President
MPH Interactive
Williamsport, Ind.

Used-gear pitfalls

Regarding "Cisco aims to own used-gear market" (DocFinder: 2723): A Cisco representative told my company in no uncertain terms that any used gear is considered "gray market" and would not be covered by SmartNet. We also were told that installing a used blade into a 6500 chassis would void the entire SmartNet contract on the 6500.

So it's a calculated risk from my perspective. Buy a used 2950 to sit at the edge and feed desktops? Maybe; it's boatloads cheaper to do that than to buy a new one and keep it on SmartNet. The catch: You

E-mail letters to jdix@nww.com or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.

opinions!

can't install updated software without a valid SmartNet contract — so if you buy a used 2950, you're stuck with whatever IOS came on it. You can't legally upgrade it, so if you run into buggy code, you're out of luck.

Buy a 6500, 7200, PIX or other piece of core or security gear on the used market? Not a chance — a critical failure or security breach not covered by SmartNet means potentially big downtime that Cisco won't help you with. In my world, that's too big of a risk to take.

Ethan Banks
Concord, N.H.

Having worked in the used equipment industry for almost 20 years, I can say without reservation that those of us who sell used, pre-owned or refurbished equipment can service and support our customers as well as or better than Cisco. This is because we are much smaller, but mostly because we honestly care. I've received equipment from the Cisco Authorized Remarketing program that made me cringe. Our techs have established a quality-control program that is second to none. I'm frankly a little tired of being treated like a criminal when we are doing exactly what Cisco is hoping to do; the only difference is that we do it much better.

Jerry Galluzzo
East Syracuse, N.Y.

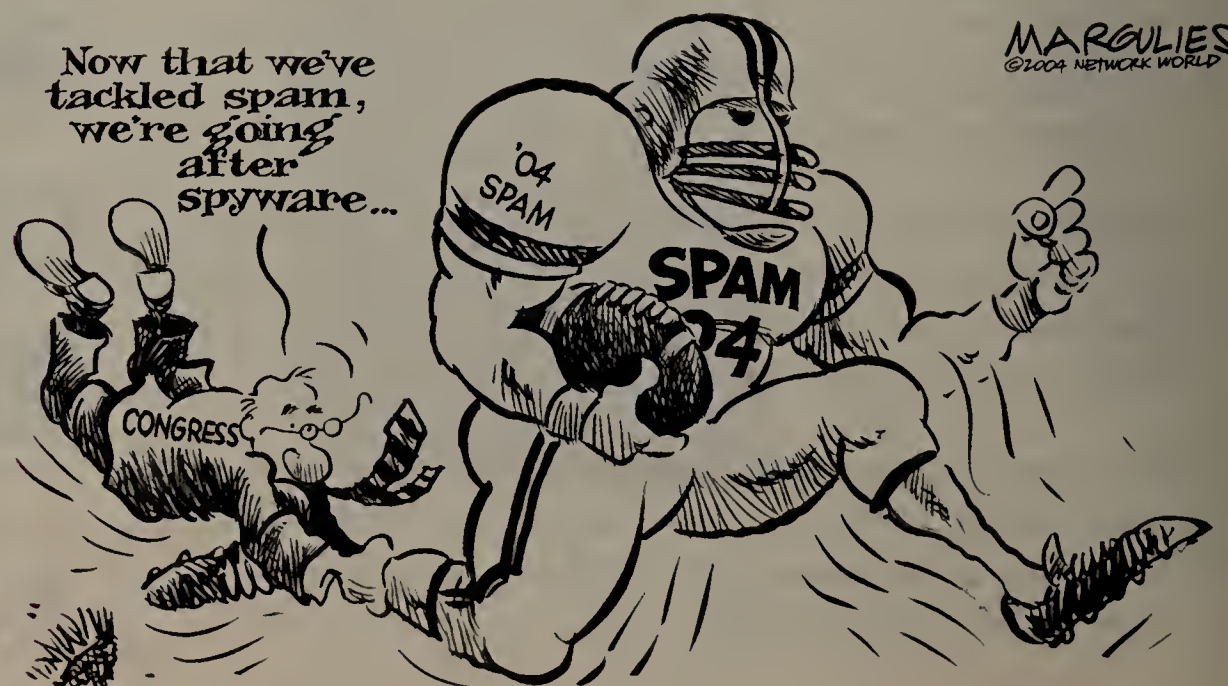
Good receipts

Regarding Mark Gibbs' Backspin column "Just say no (receipt)" (DocFinder: 2724): I can think of one "good" reason to request an e-mail receipt. I know that if I haven't received a receipt, the person to whom I've sent the e-mail hasn't read it and therefore I don't have to wonder if they just are ignoring me.

Len Morgan
Big Spring, Texas



More online! www.nwfusion.com Find out what readers are saying about these and other topics. **DocFinder: 2721**





TOTALLY UNPLUGGED

Ira Brodsky

Industry analysts tout the number of things destined to be networked: cars, utility meters, vending machines and other devices. Estimates range from tens of billions to more than 1 trillion potential machine-to-machine nodes. Research firm E-principles even predicts the number of things connected to

mobile phone networks will exceed the number of people connected to those networks by 2010 (www.nwfusion.com, DocFinder:: 2726).

Did these folks sleep through the Internet bubble?

There are many reasons to be optimistic about machine-to-machine market growth. More and more products include built-in intelligence. Mobile phone services are becoming ubiquitous, making it increasingly possible to connect remote and/or mobile sensors, switches, machines and displays to networks. Low-cost radio modems, wireless service rate plans scaled to bandwidth consumption and the emergence of powerful Internet-based tools also are driving growth.

But there are significant obstacles, too. The current wireless machine-to-machine market is quite modest: Only about 6 million radio modems were shipped for use in machine-to-machine applications during 2003. Contrast this to Nokia's estimate that roughly 600 million mobile phones will be sold this year.

The wireless machine-to-machine market is highly fragmented. The applications — ranging from monitoring heart patients to tracking truck trailers — are much too diverse for generic products. Most products still require a great deal of customization. Growth varies widely

from one market to the next.

For the number of machine-to-machine devices on mobile phone networks to surpass the number of handsets on mobile phone networks by 2010, the number of wireless machine-to-machine devices sold per year must exceed the number of handsets sold per year. But even assuming wireless machine-to-machine device sales grow geometrically while handset sales remain flat, the number of wireless machine-to-machine devices sold annually won't even begin to exceed the number of handsets sold annually until 2010.

The problem with many forecasts is they place too much emphasis on the total available market and not enough on poorly understood growth inhibitors. It's easy to assume people will spend an extra \$5 per month to enjoy theoretical benefits, but much harder to get them to pull the money out of their wallets.

I have no doubt wireless machine-to-machine will succeed. But the machine-to-machine market is still in its infancy. Based on experience in emerging technology markets, we can expect machine-to-machine to grow nicely in select vertical segments, but fail to overcome inertia in others.

Eventually, the industry will develop machine-to-machine solutions that satisfy the needs of broad market segments. But counting 1 trillion things that could be connected to networks, and predicting that today's tiny wireless machine-to-machine market will be tomorrow's behemoth, won't help us get there.

Brodsky is president of Datacomm Research Co. in Chesterfield, Mo. He can be reached at ibrodsky@datacommresearch.com.

Beware the machine-to-machine hype

The problem with many forecasts is they place too much emphasis on the total available market and not enough on poorly understood growth inhibitors.



INDUSTRY COMMENTARY

Frank Dzubeck

In a previous column, I noted some reasons why SNMP should be re-engineered around XML and event-based bus architectures (www.nwfusion.com, DocFinder: 2725). That column drew many responses, most of which were critical of the need for such a drastic change. Critics cited the additional overhead required in an embedded device agent and requiring users to learn a new programming language when the current command-line interface works just fine.

Change often is difficult to embrace but must happen so the technology industry can better serve users and applications. The original focus of management was on fault detection and recovery. Failure rates were high and diagnostic tools immature. The situation today is drastically different. Hardware now is designed using fewer components and less power consumption/heat generation, and has intelligent embedded microprocessors and better manufacturing quality. The result is almost a magnitude fewer failures.

The latest techniques that use autonomic technology soon will let all communications hardware meet a 99.99999% uptime level. Using redundant components and back-up power, that reliability level will be almost 100%. Hardware fault management will not be the primary concern of management systems.

Software is another issue, but current developer tools, testing techniques and reusable component technology are producing more reliable code that is less prone to development errors. This, combined with the ability of operating systems to dynamically reload software components after fault identification, will increase the reliability of software to a level equal to that of hardware.

Overhead issues relating to XML exist but will be addressed in hardware from a network perspective and in agent software through the use of faster microprocessors and additional memory within the hardware. This is the evolution of embedded systems — smarter, simpler and

more communicative.

The real focus of management has shifted to monitoring, performance measurement, configuration and provisioning. These will all be XML-based applications that must directly interact with corporate policy and business applications. Although I still believe the World Wide Web Consortium (W3C) should be the standards body focused on transforming systems and network management into XML-based applications, the IETF has taken the lead because of its experience. The making of standards is a slow-but-sure process. Various standards committees are in place, and new committees are being created to address the transition. Many papers and committee reports are available on Web sites such as www.ietf.org, www.oasis-open.org and www.w3.org.

The IETF was slow to don the mantle of transition, but now is rushing headlong into XML network management. Fortunately, the IETF is coordinating its efforts with the Organization for the Advancement of Structured Information Standards and the W3C. The driving force in the systems management world is vendors, not standards bodies. Dynamic provisioning, end-to-end service-level agreement monitoring, real-time performance measurement and policy-based configuration discovery are all traits required within the on-demand/utility IT model. Companies such as IBM and HP already have in place XML-based Web services management applications in support of their versions of the on-demand/utility model.

Resistance will be futile; it will occur rapidly in the systems management world and more slowly in the network management world. This is not all bad because the IETF will not have to reinvent the wheel and might even adopt the same management XML schemas as the systems world, thereby unifying systems and network management under one application, development and operations structure.

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XML and management team up

Change often is difficult to embrace but must happen so the technology industry can better serve users and applications.

The promise

NETWORK
WORLD
SPECIAL
SECTION

J O B S

Offshoring

Jobs at risk

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Poor communication, cultural differences and lack of expertise can derail engagements. Page 33

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Face-Off

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It's

a hot-button issue to be sure, but business customers using offshore services say the decision to move jobs overseas stems from some real pragmatic concerns. Take VF Corp., one of the world's largest apparel companies whose brands include Lee jeans, Tommy Hilfiger and The North Face. The company, with some 550 IT staff domestically, has been increasing its use of offshore resources the past few years and says cost cutting wasn't the only driver.

"In general, we were having trouble finding resources and keeping them in [certain] technologies at the level we wanted," says Eric Anthony, vice president of IT services at the firm in Raleigh, N.C. "In India, they were pumping these guys out left and right.... Look at the deal here: We've got very highly paid SAP programmers that we could hire in the U.S. — and they're hard to find. Or we could go to India and find very talented SAP programmers immediately at 35% to 40% lower cost."

Increasingly, companies are looking at outsourcing as a way to boost efficiencies by offloading IT tasks that don't provide a competitive advantage. At its Outsourcing Summit 2004 in May, Gartner said outsourcing will account for 53% of the worldwide IT services market this year and will make up 56% of the market by 2007.

Hand in hand with that comes an increase in using offshore outsourcing service providers as a growing international talent pool. This, combined with lower communications costs, makes managing a worker thousands of miles away as easy as having the employee in a local office.

Companies say the biggest benefit of using offshore providers is cost savings because wage rates overseas can be as low as one-tenth of what comparable workers earn domestically. But companies also are seeing other benefits, such as increased flexibility — the ability to grow and reduce the number of workers, 24-7 work schedules because of time differences and access to a broader range of IT expertise.

Challenges also exist with issues such as language and cultural differences, time zone barriers and unfamiliarity with offshore providers, according to a report IDC released in May. Nevertheless, with CIOs being asked to do more with less, interest in the offshore option is growing, especially with companies such as IBM and Accenture beefing up their offerings abroad.

Forrester Research, which made waves in 2002 when it released a study predicting that 3.3 million U.S. services jobs would move offshore by 2015, increased that estimate in May to 3.4 million. The firm also said that in the near term the use of offshore resources would grow 40% faster than originally expected, from just less than 590,000 jobs to about 830,000 jobs by the end of 2005.

At the same time, analysts note that while IT jobs undoubtedly are being pushed offshore, the number is actually a minuscule percentage of overall IT positions. Forrester, for example, points out that the number of jobs shifted offshore in 2003 — 315,000 — represents less than 1% of all jobs in the affected categories.

As compared with outsourcing in general, a study conducted by the Information Technology Association of

Lower costs, flexibility, expanded resources driving businesses to look overseas.

BY JENNIFER MEARS

America and Global Insight found that offshoring accounted for just 2% of the total \$10 billion outsourcing market today and will increase to 6% of a \$31 billion outsourcing market by 2008.

Why now?

"Where IT offshoring really became mainstream was during the Y2K period," says Partha Iyengar, a research vice president at Gartner. "Now companies are saying if this worked so well for Y2K, why don't we look at this for ongoing outsourcing? It gives us better quality than we're able to achieve on-site and significant cost savings."

Ravi Kalakota, CEO of E-Business Strategies, and co-author of *Offshore Outsourcing, Business Models ROI and Best Practices*, says the use of offshore IT services is maturing from its Y2K roots to handle not only application development and maintenance, but also to support large packaged application deployments and business-process outsourcing.

"Is all this hype? Definitely not," he says. "Offshoring is moving up from the food chain from being a 2-year-old into a 4-year-old or 5-year-old. It's able to do more things now."

The IT industry is following a familiar path when it comes to outsourcing. Manufacturing, for example, has been using offshore arrangements for decades as a way to drive down costs and boost production. In the 1990s, the production of IT hardware moved offshore, resulting in price reductions of 10% to 30%, according to a policy brief that Catherine Mann, senior fellow at the Institute for International Economics, published in December.

Those price reductions, coupled with increased productivity, resulted in an additional \$230 billion in gross domestic product for the U.S. between 1995 and 2002, Mann says. Meanwhile, IT software and services became an increasingly important part of overall IT. Mann notes that between 1993 and 2001, the increase in IT hardware spending was 6.7%, while growth in software and services was nearly double that at 12.5%.

"In the face of this demand, and enabled only since the mid-1990s by the Internet and standardization of methods, software and services are now beginning to be produced globally," she writes in the brief titled, "Globalization of IT Services and White Collar Jobs: The Next Wave of Productivity Growth." "Just as for IT hardware, globally integrated production of IT software and services will reduce these prices and make tailoring of business-specific packages affordable, which will promote further diffusion of IT use and transformation throughout the U.S. economy."

While some of those IT jobs will go abroad, new opportunities will open in the U.S., she says.

"As more sectors of the economy and more businesses use the IT packages in the U.S., high-skill jobs to design

of offshoring

and tailor IT packages will increase in the IT sector, and jobs demanding the skills to use these IT packages effectively will diffuse throughout the economy," Mann writes.

The Bureau of Labor Statistics says that occupations requiring IT skills will grow at three times the rate of job growth in the overall economy during the next 10 years.

Real life, real impact

Still, real-life issues of job losses have created a backlash and made offshoring a hot political issue.

"The pressure [on IT jobs] will continue," E-Business Strategies' Kalakota says. "As long as the economy does not improve, or trudges along the bottom, the pressure on IT jobs is going to be quite severe. Now, if the economy starts picking up and more hiring starts because there are just more projects, then the IT pressure might steadily decrease, for a while at least."

Kalakota notes that economists and others point to the creation of new jobs in the long run, "but we don't live in the long run. We have to put food on the table today."

Increasingly, companies are paying attention to the very real impact offshoring is having on IT workers who find themselves jobless. Already, there is legislation pending in Congress that would extend benefits to IT workers who have been displaced as a result of jobs moving offshore. Corporations such as IBM, which plans to move an additional 3,000 jobs offshore by year-end, are extending benefits of their own.

"We've set up a couple of different funds for those people that had those jobs," says Clint Roswell, a spokesman for IBM. "There is a \$750 million commitment from our chairman [Sam Palmisano] to develop hot skills jobs and train people for them, and of that \$750 million, \$400 million is for workers here in the United States."

In March, Palmisano also announced the \$25 million Human Capital Alliance fund, which is aimed at retraining IBM employees with new skills and then placing them in positions with IBM or one of IBM's partners.

"We understand the circumstances here and it's been somewhat fast in the way it has unfolded, but we realize that training and retraining and retooling is something that has to be done over and over again in the IT industry," Roswell says. "Offshoring has hastened it a bit for us."

The upside

Those with the right skills will be able to take advantage of the evolving IT economy that will include offshoring as one factor that will actually boost IT transformation at home, analysts say.

"The net impact is actually positive because what you're getting with offshoring is substantial cost reductions," says Nirvikar Singh, professor of economics at the University of California-Santa Cruz. "Some of that may go straight to the bottom line, but a lot of that savings will go into hiring people to perform other tasks. It can go into trying to reach new markets, it can be used for other kinds of investments that will generate jobs somewhere else."

A study by the McKinsey Global Institute published last summer found that for every \$1 corporations spend offshore, the U.S. economy gets \$1.14 in return because of lower prices and new job opportunities. More specifically,

corporations using offshore services stand to save 58 cents for every \$1 they spend offshore, McKinsey says.

"What numbers [like the Forrester numbers] neglect is the fact that a country like the United States goes on creating new kinds of jobs, and that's what happened in manufacturing," Singh says. "I guess people are worried now because we replaced manufacturing jobs with services jobs and they're saying, 'Now services jobs are going overseas.' What's going to replace them are other kinds of services jobs."

General Electric, for example, has had a global presence since the late 19th century and began offshoring IT-related functions in the mid-1990s. While GE continues to expand its workforce internationally — adding about 100,000 jobs in foreign countries during the past 10 years — the company also has maintained its 160,000-strong employee base domestically, says GE spokesman Peter Stack.

"It's pretty clear that with the shifting nature of our U.S. employment composition [from primarily manufacturing-based to services-based positions], that a large number of IT and service jobs have been created in the past 10 years in the United States," he says. "They would be more high-tech and dedicated to high-growth businesses."

At the same time, Stack makes no excuses for GE's use of international workers, saying that in addition to cost savings, it's imperative to have a foreign presence to operate as a global company.

"We have realized a lot more than a basic cost arbitrage through different types of offshore presence," he says. "GE is an extremely global company to begin with. We derive about 40% of our revenue outside the U.S., and the same percent of our workforce is housed outside the U.S."

"There are tremendous bases of employees for us to use to global advantage ... and they're usually GE employees and support GE businesses, not just in the United States," he continues. "It's not as though a function or job or process done in the United States has been ended and moved offshore. Frequently it's a process or a job or a function that's being designed for optimum efficiency, and we'll take advantage of the fact that we have this employee talent pool to draw from in this location or that location. Cost is a huge factor. But one of the reasons we don't want to quantify it is it's not the sole factor or sole determiner, and cost at the expense of quality or efficiency is a concession that we absolutely won't ever make."

A growing trend

For its part, VF Corp. has anywhere from 100 to 130 overseas workers focused on IT projects that range

from a technical service desk handled by offshore services provider Patni, to SAP programming, to software development and maintenance. Anthony says VF is continuing to evaluate what IT tasks would make sense to outsource and expects to increase the use of offshore services.

"Outsourcing to us is a bigger question, not necessarily offshoring. We look at outsourcing and ask, 'Does it make business sense to do more outsourcing,' he says. "The only way we feel that a company can come in and outsource and save you money is to leverage the offshore model."

A study IDC published in May found that 26 companies using offshore service providers currently spend about 5.4% of their IT budgets on offshore resources, but plan to increase that percentage in the next year or two by about 25%.

Just the facts

What's the big deal?

It's true that IT workers are being displaced as businesses turn to offshore resources, but analysts note that in reality the number of jobs being offshored is a small fraction of the overall IT workforce. At the same time, businesses stand to benefit from cost savings and increased productivity, and analysts say that IT job opportunities here should grow as a result.

By the numbers

3.4 million

Number of U.S. services jobs predicted to move offshore by 2015. Stephen Roach, chief economist at Morgan Stanley, says this works out to annual job losses of about 300,000 over the next decade and points out that the U.S. economy employs 130 million workers today.

\$1.14

For every dollar corporations spend offshore, they can expect \$1.14 in return.

"Driving this increase in spending for offshore services ... is the need to drive down costs," the report says.

Anthony says that costs savings aren't the only benefit he's seeing. He says the ability to increase and decrease IT resources as needed is particularly important.

"If I have a project that requires 10 people today to design it and then 40 people to build it and four people to implement it, in an offshore relationship I can ramp up and ramp down like that," he says. "But if I had to hire 40 people domestically and only needed them for four months, that would be very difficult."

While he says that VF hasn't had to add new positions to manage offshore relationships, that has been the experience of other companies using offshore providers.

Healthcare technology company St. Croix Systems, for example, has added sales positions and product managers

See Promise, page 46

Special Report

From Network World Fusion

Heard about Sobig, Blaster, and MyDoom?

In recent years, IT has made a significant investment in security, yielding achievements that have been the foundation to enabling trusted computing from virtually any location, at any time. Despite these efforts, new types of attacks have emerged in recent months that have dramatically overrun existing security measures. These hybrid exploits, such as Sobig, Blaster, and MyDoom, are an amalgam of viruses, worms, Trojans, and — for many, the most effective element — social engineering that leads to their execution by an unwitting recipient. Classed when they appear as “zero-day” exploits, they can spread quickly throughout much of the Internet, no matter how rapidly countermeasures are deployed. They may leave behind lingering threats, such as back doors that leave a compromised system — and its users — vulnerable to further exploitation and leakage of sensitive information. While their effect has so far has been felt mostly in terms of consumed resources and remediation, they have cost IT billions of dollars regardless, by any estimate. And this is without having truly manifested the full destructive potential of which they could be made capable.

In this Special Report, we take a look at an emerging effort to contain these exposures, through enforcing compliance with endpoint security measures, as well as other initiatives intended to better protect both the endpoints and the trusted networks to which they connect.

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About the Author

This SPECIAL REPORT is authored by Scott Crawford, CISSP, a senior analyst with Enterprise Management Associates (EMA), an IT industry analyst firm headquartered in Boulder, Colorado. The firm focuses on all aspects of IT management systems, software and services.

SPECIAL REPORT

The Network Endpoint: Target of Opportunity

By Scott Crawford, CISSP
Enterprise Management Associates (EMA)

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ENDFORCE

Jobs at risk

Repetitive, commoditized IT work most likely to head offshore.

BY JENNIFER MEARS

"If you're doing maintenance work where an application is already built and you're sitting in a back office updating code or maintaining code, you may be at risk."

Ravi Kalakota, CEO, E-Business Strategies

MedSite figured it could save money by using offshore resources to bulk up its IT staff, but the online marketing and education services firm also knew it had to think carefully about which jobs would make sense to push overseas.

Today, the company uses back-end application developers in Minsk, Belarus, as a way to cut its software development time by a third.

"We're not leveraging offshoring as a head-cutting resource, as much as leveraging it to augment our in-house expertise," says Jason Hogg, COO at the New York company.

By using the offshore resources through service provider Epam Systems, MedSite is able to increase and decrease its pool of developers as needed, while maintaining more critical business-focused software architecture expertise at home.

"What we did is we brought [offshore workers] in to co-develop the next version of our interactive detailing platform [a marketing program], which is a major initiative," Hogg says. "We work as a single project team: They're doing the back-end coding offshore, and we're doing the front-end architecture and user interfaces. So all of the front-end stuff is designed in-house and then moved offshore for actual development.... In doing so it enables us to do things much more cost-effectively and faster."

With more businesses looking seriously at sending IT work offshore, the question is what IT jobs are most at risk. St. Croix is not alone in deciding to offshore back-end functions that don't really give the business a competitive edge. Analysts say the more repetitive, commoditized positions such as application programming, database management, technical support and data entry are those most likely to be sent overseas.

"If you're doing maintenance work where an application is already built and you're sitting in a back office updating code or maintaining code,

you may be at risk," says Ravi Kalakota, CEO of E-Business Strategies and co-author of *Offshore Outsourcing, Business Models ROI and Best Practices*.

"Database management, database administration, the commodity database work probably can be done remotely, as well."

Forrester Research says offshore vendors continue to expand their offerings and are providing more in the way of business-process outsourcing, implementation of packaged applications, and remote monitoring and administration of infrastructure, all of which will expand the range of IT jobs that could be vulnerable to movement overseas.

On the flip side, companies will be looking to more tightly integrate IT with business objectives, and people who have the expertise to tie together technology and business will continue to be marketable in the U.S.

"People who truly understand the business side and are able to translate it into technology are going to be very valuable," Kalakota says.

"I'd expect there will be more high-end architecture jobs created," Kalakota adds.

As a result, positions such as project manager are expected to grow because of the need for companies to integrate the offshore work into its overall business objectives.

Healthcare technology company St. Croix Systems, for example, which set up a subsidiary in Hyderabad, India, with the help of service provider i-Vantage, offshores primarily application development work and plans to beef up project management resources in the U.S. as the company grows.

"Right now project managers are all here, and then the next layer of management, the team leaders, are in India," says Troy Kenyon, president and CEO of the Cambridge, Mass., company. "My expectation is we'll need more of the higher-value jobs here in the future." ■

Just the facts

What's the big deal?

With more businesses looking at moving IT functions offshore as a way to cut costs, IT workers must focus on updating their skills to make their jobs less likely candidates to be shipped overseas.

By the numbers

A report IDC published in May listed the functions companies have been most likely to move offshore:

1. Legacy/custom application development.
2. Legacy application maintenance.
3. Web application development.
4. Customer care, services/call center.
5. Management of IT infrastructure/IT outsourcing.
6. Packaged application implementation.
7. Finance and accounting.
8. Procurement.



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The downside of offshoring

Poor communication, cultural differences and lack of expertise can derail engagements.

■ BY ANN BEDNARZ

Economics lured Hemant Kurande to look to India, his birthplace, for more affordable engineering talent. Three years ago his company hired two service providers to do some core programming for a line of storage management products.

The results were mixed, says Kurande, CTO of Storability. The providers built products that were suitable as prototypes for R&D, but not production. That gap put the burden on Storability employees to shore up the code.

"We were not getting the quality we wanted," Kurande says. "The offshore companies provided a high degree of innovation, but a lower degree of readiness to ship."

The root of the problem was a lack of knowledge on the part of the outsourcing providers. "The depth of storage expertise we needed was very difficult to find," Kurande says.

After maintaining the offshore arrangements for two years, Storability concluded that some work is best kept in-house. Kurande didn't give up on India, though. Instead, Storability set up its own office in Pune. It employs 25 people there and is adding about five employees per month. Having control over hiring, training and retention, as well as product development processes, makes a big difference, Kurande says.

Storability is not alone in reevaluating offshore outsourcing plans that fell short of initial expectations.

In recent months, a handful of big-name companies have decided to return certain offshore work to the U.S.

Insurer Consecoco recalled its customer service operations as it worked to emerge from bankruptcy. Following complaints about the quality of service, investment bank Lehman Brothers canceled an offshore help desk engagement. Similarly, Dell brought back a technical support center after corporate clients complained about communication and service.

About 21% of IT executives surveyed recently by management consulting firm DiamondCluster International said they had prematurely terminated offshore arrangements in the prior 12 months. The most common reasons cited: the provider had financial difficulties; the provider failed to deliver on commitments; or the buyer consolidated its outsourcing vendors.

Nonetheless, the amount of work coming back is a trickle compared with the flood of work leaving U.S. shores.

The availability of lower-cost technical labor in countries such as India, Russia and the Philippines is winning over resource-strapped U.S. businesses. In the DiamondCluster survey, 86% of respondents said they expect to increase their use of offshore outsourcing over the next 12 months, up from 32% in 2002.

But analysts agree, satisfaction isn't guaranteed. Companies offshoring are more than twice as likely to be dissatisfied with the relationship than those using national service providers, according to AMR Research (see graphic, below).

A big part of the disenchantment stems from inflated expectations. In par-

ticular, cost savings are frequently overestimated.

A common mistake, for example, is to project savings by simply calculating the wage differences between customer service agents in the U.S. and India, says David Butler, director of the international development doctoral program at the University of Southern Mississippi in Hattiesburg. "People see a 1-to-10 savings and extrapolate from there the labor costs savings they will achieve by moving their call center overseas," Butler says. "The problem is, labor isn't the only cost associated with moving overseas."

Cultural differences, for example, mean more training is required to prepare non-U.S. workers to effectively handle calls from Americans, Butler says.

"In India, customer service is usually pretty good — the reps are very nice to callers. The problem is, they often can't resolve the call," Butler says. As a result, a higher percentage of calls are escalated to supervisors. "So you actually have people in queue longer, you have people on the phone longer, and at the end, a lot of times there's not a resolution."

Application development projects sent offshore can suffer from similarly misaligned savings expectations.

At the raw resource-to-resource level, offshore development offers a compelling cost advantage, says Parthalyengar, vice president and research director at Gartner. "If you look at a programmer with three to four years of experience, that might cost \$45,000 to \$55,000 per year here, depending on location," lyengar says. "That same

Just the facts

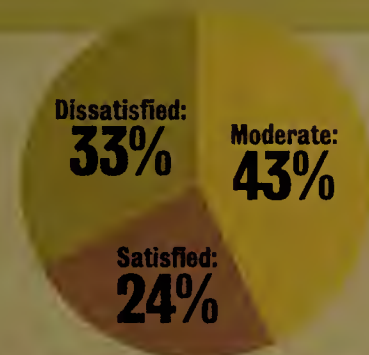
What's the big deal?

Unrealistic expectations about cost savings, loss of control over intellectual property and management gaps are among the issues that can derail an offshore outsourcing project.

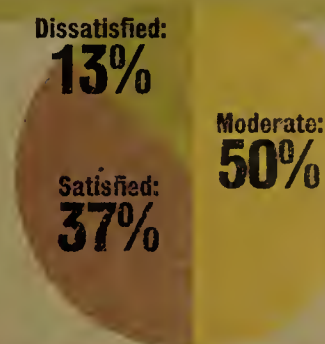
By the numbers

How's it going?

More companies using offshore outsourcing services are dissatisfied with the relationship than those using national service providers, according to AMR Research.



How satisfied are you with your offshore outsourcing relationship?



How satisfied are you with your regional or national outsourcing relationship?

Just the facts

By the numbers

Offshore outsourcing is on the rise . . .

86% of respondents in a survey from DiamondCluster International expect to increase their use of offshore IT outsourcing over the next 12 months, up from 32% in 2002.

. . . but it's not all roses

21% of IT executives in the DiamondCluster study said they had prematurely terminated an offshore arrangement in the prior 12 months. The most common reasons cited for canceling outsourcing deals included:

- Provider had financial difficulties.
- Provider failed to deliver on commitments.
- Buyer consolidated its outsourcing vendors.

Seeing results takes time

20% decline in productivity is experienced by most IT organizations during the first year of an offshore outsourcing agreement, according to Meta Group. A key reason is the effort required to transfer technical and business knowledge to a vendor, the firm says.

resource in India would probably cost \$15,000 to \$19,000 per year."

But it's more complicated than that, lyengar says. Lower productivity can eat away at labor savings. Plus it's more expensive to manage an offshore development relationship. "Companies that understand labor is not the entire story usually realize whatever cost savings they expect," he says. Those that don't wind up disappointed.

Storability knows the importance of setting reasonable expectations. Kurande says the company has built in a two-year adjustment period before it expects to benefit from having an office in India. Until 2005, the offshore team isn't expected to save money or realize huge productivity gains. In fact, it's just the opposite.

In the short term, Kurande says working with offshore labor creates headaches. Offshore setups require all employees to adjust their processes and get used to a geographically distributed development process that is unfamiliar and requires a re-evaluation of roles and responsibilities. "It's not natural. Natural is having everybody on site in the same location."

He goes so far as to say that unless a company is in it for the long haul, offshoring doesn't make sense. "There are no benefits to gain in the short term," Kurande says. "It's not even worth doing."

Border concerns

According to IDC, the top three risks that users associate with offshore outsourcing are time-zone issues, language barriers and cultural differences.

In particular, cultural differences have to be closely managed in an offshore relationship. "You can get into cultural nuances where the U.S. manager doesn't understand how to manage the offshore team, and the offshore team isn't always comfortable taking instructions from an American manager," lyengar says.

Some distinctions are simple but potentially critical. For example, in India a "yes" doesn't always mean what a "yes" means in America. "In the U.S. it's pretty unambiguous what it means when you say 'yes,'" lyengar says. "In India it means, 'I'll think about it, and I'll get back to you.'"

The importance of local expertise keeps Mobil Travel Guide's call center close to home. The Park Ridge, Ill., company, which is known for its North American travel guides, generates a portion of its revenue by selling hotel reservations — transactions that require call center agents to have a good understanding of U.S. and Canadian locations.

"We want individuals who are able to sell hotel rooms," says Paul Mercurio, senior vice president and CIO of the company. "That means they need to understand geography. They need to

know that Des Moines is in Iowa. They need to be able to explain proximity to the Hoover Dam. There needs to be contextual knowledge of the United States and Canada."

Mobil Travel Guide selected Virtual Agent Services, a Chicago service provider with call centers in New Brunswick, Canada, to handle reservations. The decision wasn't about price, but rather about expertise — Virtual Agent Services specializes in hotel sales, Mercurio says.

Foote Partners, a research and advisory firm in New Canaan, Conn., has studied 90 offshore outsourcing implementations over the past three years and has found companies that don't achieve the desired outcome are tripped up by communications problems, not technical shortcomings.

Organizational, behavioral and cultural aspects are more to blame than the details of contracts and technology selection, says David Foote, president and chief research officer.

Companies aren't paying enough attention to how they manage the people involved in offshoring projects and how they make the transition to a distributed workforce, Foote says. Communication problems that aren't addressed early in the process continue to fester and impact project delivery.

Changing workloads

As in Storability's case, some companies shy away from offshoring because of quality concerns. CareGroup Health System relies on key vendors for infrastructure design but isn't about to give up control of its application design.

"I've hired Cisco to design my wide-area network. I've hired EMC to design my storage architecture and information life-cycle management processes. I've hired Microsoft to 'harden' my Windows security infrastructure," says John Halamka, CIO of the network of five Boston-area hospitals. "My experience with offshore outsourcing is that you can pay very little for a large quantity of unusable code."

Analysts agree outsourcing software development has its risks. The big ones, according to Aberdeen Group, are untested technology vulnerabilities; additional costs for fixes and patches; increased risk because of unauthorized access to business data; and operational instabilities.

Over the years, however, the quality of offshore work has gotten better, particularly in certain focus areas, but gaps remain.

Services that are traditionally sent offshore include application maintenance work, custom application development, data entry, customer service and technical support. Two years ago, there was a general lack of experience in customizing packaged applications such as those from SAP and Oracle, says Lance

Travis, vice president of research at AMR Research. But he contends that many providers now have gained experience.

"U.S. companies are generally satisfied with the quality of software development available offshore," especially in India, where excellent process technology is common, Travis says.

But offshore projects are getting increasingly strategic, which changes the stakes. Over the past 18 months, offshore providers have landed broad application development projects for U.S. clients that encompass everything from requirements definition and design to development and testing, lyengar says.

This can inflame cultural issues. "While Indians are great at technical capabilities, a lot of the IT resource pool in India is not very good in terms of people skills," lyengar says. So to suggest an Indian outsourcer handle requirements definition — which requires heavy interaction with end users — may be counterproductive, lyengar says. "In the end, the client may have to dedicate quite a few of its own resources to help the Indian outsourcer through the process. Which becomes much less efficient."

As a rule, anything that a client can cleanly specify and deliver as a firm requirements document to the offshore team is most effective. Clear, complete specifications are a must-have, Travis says. But that's not always common practice in U.S. companies.

In a local setting, IT departments are often looser about the early stages of an application-development project, such as the requirements-gathering process, Travis says. In offshore arrangements, "there needs to be a more robust process for gathering requirements, and you have to write much better functional specs because you're handing those off to someone else." Without that discipline, a project can take three times as long to complete offshore as onshore.

The migration to reusable software components and service-oriented architectures (SOA) promises to muddy the issue even further. "When you move into SOA, the focus is not so much on the pure programming but on architecting the requirements of the business as a whole bunch of services," lyengar says. "What becomes more important is your understanding of the business and how the processes within the business interact."

The challenge for offshore providers is to accrue more business-focused expertise, such as people who are comfortable with how processes work in industries such as insurance, healthcare, banking and finance.

At the same time, U.S. IT executives need to consider if their own business savvy is up to par.

IT technologists don't always have the expertise they need to manage a

strategic, business-centric relationship with offshore IT teams, Travis says. It takes training and skills development to turn technology-focused IT workers into business-focused IT workers.

Almost everybody can save 15% to 20% by sending certain IT work overseas, he says. Those that really understand how to make it work find they save 50% or 55%. "There's a huge benefit to making outsourcing a core competency."

Protecting corporate smarts

Gaps in business savvy raise not only technical issues but also legal concerns.

Regulations such as the USA Patriot Act and Sarbanes-Oxley Act affect a range of companies and govern how those companies structure their business processes. Industry-specific regulations such as the Health Insurance Portability and Accountability Act (HIPAA) also require data and processes to be handled a certain way.

Companies have to decide the level of risk they are comfortable with and make the decisions accordingly. And that is often enough to convince companies to keep businesses onshore.

"The domain of medicine requires such expertise and such a degree of user feedback that using offshore developers is not practical," Care-Group's Halamka says. "Further, HIPAA regulations put severe restrictions on the privacy and security of data, so we do not want to outsource call center activities that require patient-identified data to be kept offshore."

Ensuring the security of corporate information is an issue that isn't going away, particularly as companies consider sending more strategic work offshore. As that happens, the risk of intellectual property leakage rises.

"One of the dangers is that all of this work is being done in a remote location with very little interaction between that team and the on-site experts," lyengar says. "Over time, on a 1-, 2- or 3-year project, the learning and the knowledge around those applications is really in the offshore vendor's heads, not in your own team's heads."

The retransfer of business knowledge and intellectual property is critical. lyengar recommends scheduling time in a project cycle for weekly or quarterly "reverse knowledge transfer." He also recommends adding provisions for getting copies of an outsourcer's maintenance logs.

"The combination of these two things — which we see very few clients doing today — is something we strongly recommend," lyengar says. "Be aware that you could be losing your knowledge and IP over time."

In the end, many people believe the shift to offshore IT is inevitable. The instances of big corporations bringing work back after a bad overseas experi-

ence is an anomaly and over-hyped, lyengar says. The jobs Dell returned to the U.S. represent only a small percentage of its offshore service operations. The same goes for Lehman Brothers, he says.

The net impact on most IT organizations has so far been minimal. But within the next five years, 800,000 of the 10 million IT jobs in the U.S. will move offshore, AMR's Travis predicts. "The whole migration is inevitable for

sure," Storability's Kurande says. His company's new arrangement isn't effortless, but it looks like it's going to work. "We can address gaps in an effective fashion," Kurande says. "We figured out a balance." ■



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A political hot potato

Legislatures juggle offshore outsourcing regulations.

■ BY CAROLYN DUFFY MARSHAN

Troubled by the movement of high-tech jobs overseas, state and federal legislatures are trying to discourage offshore outsourcing in the sector of the economy they control: government procurement.

In May, Tennessee became the first state to pass legislation aimed at preventing the offshore outsourcing of its IT services. Tennessee's law says contractors that keep data entry, call center and other IT support jobs in the U.S. will receive significant preferential treatment during the bidding process on new contracts.

"The Tennessee law is precedent-setting because it's the first regarding the whole issue of IT outsourcing," says Justin Marks, a policy analyst with the National Conference of State Legislatures. "Tennessee didn't ban [offshoring], but it inserted preferences into its procurement code for contractors who employ U.S. workers."

The governors of three other states — Arizona, Minnesota and Michigan — have signed executive orders in recent months that give preferences to any contractors that use U.S. or in-state workers. Of these directives, Arizona's is the most stringent because it prohibits state work from being performed overseas.

From Alabama to West Virginia, many other states are considering similar measures. State lawmakers have introduced 35 bills that explicitly ban offshore outsourcing on government contracts, up from eight such bills last year, Marks

says.

Government spending accounts for about 30% of the nation's economy.

The issue of offshore outsourcing "blew up this year," Marks says. "Whenever an issue comes up as fast as this came up, legislatures are going to introduce [bills] that are designed to fix the problem. It doesn't mean that these particular bills are going to [pass] but they will work their way through the system."

Congress is considering making changes to federal procurement laws to prohibit or at least limit offshore outsourcing. The Senate in March passed an amendment sponsored by Sen. Christopher Dodd (D-Conn.) that prohibits offshore outsourcing of federal, state and local government contracts where federal dollars are involved. However, the Dodd amendment includes a provision that the Secretary of Commerce must certify that these anti-offshoring measures will not harm the U.S. economy. The House of Representatives has yet to consider the Dodd amendment, and Capitol Hill watchers say its future is unclear.

"Workers in Connecticut and across the nation are first-rate. It simply doesn't make sense to export their jobs and futures half-way around the world to save a few pennies," Dodd said when he introduced his amendment in February. "This administration needs to get its priorities straight, and use taxpayer dollars to invest in America — American workers and small-business owners. This legislation is a step toward stopping the needless export of American workplaces."

Sparking opposition

Such measures have sparked plenty of opposition.

"When there's an issue that has as broad complexity as this — and we're dealing with very seminal trade issues here — it tends to be an issue that Congress cannot deal with quickly," says Stan Soloway, president of the Professional Services Council (PSC), a trade group that represents government contractors. "So Congress tends to go to the place where they have impact: government procurement."

Several industry trade groups, including the PSC and the Information Technology Association of America (ITAA), have united to lobby against changes to the federal, state and local procurement laws that would discourage offshore outsourcing.

"Offshoring is our most time-consuming issue by far," says Harris Miller, president of the ITAA. "We're actively fight-

ing all of these bills."

The federal government — particularly the Department of Defense — has been purchasing more commercial off-the-shelf hardware and software rather than special-purpose gear to save money. Government suppliers don't want to see this trend reversed by the passage of bills that ban offshoring.

"If we have to do things uniquely for government... that will take us a big step backwards and drive costs through the roof," Soloway says.

Policy wonks say they were surprised at how quickly offshore outsourcing caught the attention of lawmakers. The issue gained momentum earlier this year because of the slow pace at which new jobs were being created after the recent recession.

As unemployment soared, more companies, including computer manufacturers, telecom carriers and software developers, replaced white-collar U.S. workers with their less-expensive counterparts in India, Russia and other countries. Although manufacturing jobs have migrated overseas for decades, the loss of professional and technical positions caught politicians by surprise.

Ideological split

The issue of offshore outsourcing splits lawmakers into ideological camps — those who favor job protection measures and those who favor free trade — rather than along party lines.

"Offshoring doesn't fit into neat categories," Soloway says. "We see things come out of moderate Democrats such as the Progressive Policy Institute that are not radical at all. And on the Republican side, we see some members getting pressure from their constituents — mostly members of the Rust Belt states — to do something."

"All politics is local, and we have protectionists on both sides of the aisle," Miller adds.

State legislatures are conflicted by offshoring because tax revenues are down and they are under pressure to cut costs. States can often save money if they hire contractors who send IT support work overseas because they

Just the
facts

What's the big deal?

You could wallpaper the Capitol building and 50 statehouses with all the legislation circulating that purports to do this, that — or nothing — about offshore outsourcing that involves your tax dollars. Legal barriers to offshoring of this type are necessary to halt the flow of good jobs overseas, proponents insist, while critics — including major trade organizations — warn they will sacrifice U.S. competitiveness on the altar of job protection.

charge lower rates than those who hire only U.S. workers. Many states have laws that require them to choose the lowest-price bidder on all of their contracts, not just for IT services.

At the same time, lawmakers are under pressure from unions and unemployed constituents to keep high-paying, white-collar jobs in their states. When states have awarded contracts and discovered that the IT support work such as call center operations and data processing are done overseas, they've received sharp criticism.

"I see this as a 'buy American' issue," says Ray Bjorklund, senior vice president with Federal Sources, an IT consultancy. "The economy has contracted in the U.S., and we have concern about joblessness. We have technical people running around that [are unemployed]. This [issue] is driven by the economic retrenchment."

Neither the federal government nor the states has definitive statistics on offshore outsourcing, but experts agree that very little government IT work currently is performed overseas. It's rare for a state or federal agency to award an IT contract directly to a foreign company. The work that has gone overseas is mostly through subcontractors, and it's primarily telephone support and back-office information processing rather than strategic IT tasks such as network design or management.

"If I have a contract to do IT work for a government agency, the direct work is almost all U.S.-based because of security issues and customer requirements," Soloway says. "We have 160 member companies in the PSC, and I'm unaware of any cases where [offshoring] is happening on a direct level."

Since the Sept. 11, 2001, attacks, federal agencies have tightened information security requirements and increased the number of IT support jobs that require security clearances, which must be done in the U.S.

"Even before 9/11, the Department of Justice put out a policy that said from henceforth there would not be any software written offshore," Bjorklund says. "Since 9/11 there's been increasing apprehension about any kind of work that might be done offshore. For mission-critical or classified work, it's highly unlikely there's any done offshore."

However, the commercial hardware and software components used on government IT contracts might have some aspects that are handled overseas. Software vendors such as Oracle and Indus conduct software development overseas. Computer manufacturers such as Dell use offshore call centers.

ITAA estimates that 2.3% of all IT work by U.S. high-tech companies is done offshore. But for government procurement, "I would guess it's less than one-half of 1%," Miller says. "We're talking about minuscule amounts of work

going offshore."

Soloway says it will be difficult for prime contractors to deal with federal or state laws that ban or severely restrict offshore outsourcing on government contracts because so much manufacturing and support of commercial products is done overseas.

"Where you see the impact [of these bills] is on the indirect side," Soloway says. "If I'm the prime contractor, I don't know where all the software is being written or where the support is for the software. And what about the components? It becomes un-executable for the potential bidder."

To better understand their dependency on offshoring, several states have asked their chief procurement officials to generate a list of contracts and subcontracts for which work is done overseas. Meanwhile, the Congressional Research Service is conducting a study to determine how much of the federal government's IT work involves offshore outsourcing.

The most visible example of government offshoring has been the call center operations that support state food stamp and welfare programs. Several states contract with eFunds, a Scottsdale, Ariz., firm that subcontracts call center operations to firms in India.

Offshore recalls

New Jersey came under fire for offshoring 12 call center positions that handled queries about its food stamp program. New Jersey ended up bringing the call center jobs back to the state, which cost the state an additional \$900,000. Similarly, Indiana canceled a contract with an overseas supplier last year that would have saved the state \$8.1 million, Marks says.

Proponents of offshoring cite these examples as why government agencies will pay more for IT hardware, software and services if they restrict offshore outsourcing.

"If there are statutory obligations to keep the work in the U.S., that's going to increase the dollar value of the contract," Bjorklund says. "The cost of the procurement is going to go up, and that may not be good overall for the taxpayers."

Business interests have joined forces to fight legislation that would restrict offshore outsourcing. A dozen major trade groups — including the U.S. Chamber of Commerce, the Business Roundtable, ITAA and PSC — formed the Economic Growth and American Jobs Coalition to lobby against all of these bills.

These groups oppose offshoring legislation for several reasons. They argue that it's inappropriate to compare the decades-long exodus of manufacturing jobs with the latest shift of IT support jobs overseas because the U.S. IT industry has an overall trade surplus while

many manufacturing industries have trade deficits. They disagree with lawmakers determining trade policy through legislation rather than through negotiated trade agreements. They worry about having a patchwork of offshoring laws being passed by various states.

"If the Dodd amendment passed as is, it would invite retaliation from other countries around the world," ITAA's Miller says.

"One of the major objectives of ITAA is to continue to open up government markets around the world and improve the ability of U.S. companies to compete in these markets. . . . If something like the Dodd amendment were signed into law, it would make it much more difficult for U.S. companies to compete," Miller adds.

"If this is a trade issue, we should deal with it as a trade issue," PSC's Soloway says. "We need to recognize that there are all kinds of trade agreements in place and these bills would put government agencies in violation of these agreements."

Most of the legislative activity related to offshore outsourcing is focused on government procurement. But increasingly, lawmakers are focusing on privacy and security concerns associated with information about U.S. citizens being processed overseas. Some state legislatures are considering bills that would prohibit financial or medical data from being sent overseas without the consumer's permission.

"Interest in the security and privacy issues around offshoring is growing, but it's hard to predict whether any of these bills is going to pass or not," Soloway says.

Legislatures also are considering bills that require companies to give as much as 60 days' notice to employees and state labor departments when they are going to lay off employees and move jobs overseas. Some states are debating notification-oriented bills that would require call center operators to disclose their location to consumers.

With so many proposals on the table, the issue of offshore outsourcing promises to stay in the forefront during this election year. Already, Democratic presidential candidate John Kerry has come under fire for some of his remarks criticizing offshore outsourcing, while the Bush administration is backing industry groups.

"This issue is going to remain very, very prominent," Miller says. "If the employment situation continues to improve, it may diminish somewhat. But it will still remain hot." ■

States target offshoring

New laws discourage practice of offshoring on government IT contracts.

Arizona

Gov. Janet Napolitano (D) issued a directive in April that prohibits state work from being outsourced overseas.

Michigan

Gov. Jennifer Granholm (D) in March signed an executive order that awards preferences to Michigan-based job providers during the state's procurement process.

Minnesota

Gov. Tim Pawlenty (R) issued an executive order in March that directs state agencies to recognize the value of work performed in the U.S. when selecting the "best value" bid.

Tennessee

Gov. Phil Bredesen (D) in May signed into law a provision that directs state agencies to give preferences to contractors that keep IT support jobs in the U.S. on new bids.

"If there are statutory obligations to keep the work in the U.S., that's going to increase the dollar value of the contract. The cost of the procurement is going to go up and that may not be good overall for the taxpayers."

Ray Bjorklund, senior vice president, Federal Sources



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A global gambit

India gets a lot of attention but Estonia, Russia, China and other countries want your business, too.

BY MARC FERRANTI

Upgrading an Internet connection in St. Petersburg, Russia, can be complicated, as FutureTrade Technologies can attest.

"From beginning to end it took about a year, and at each step in the process an intermediary saw an opportunity to tax us," says Tom Dilatush, CTO at the Lake Forest, Calif., trading systems company.

FutureTrade's experience reflects issues that face any company looking offshore and outside established Indian centers for IT services: the inconsistent level of urban and communications infrastructure and talent necessary to support offshore IT services.

FutureTrade employs about 50 developers in Tallinn, Estonia, and St. Petersburg. Upgrading the St. Petersburg Internet link from 256K to 512K bit/sec involved convincing the landlord of

FutureTrade's office building to change their contract to let the company deal directly with its ISP. The initial connection, about four years ago, involved laying copper in the street.

"In Estonia, on the other hand, we snapped our fingers and got an E-1 connection; it took us about a week and a half," Dilatush says, adding that in Tallinn fiber is already laid out to buildings.

Seeing India's success, countries from Asia to Eastern Europe, Africa and Latin America, as well as Ireland, are promoting themselves as alternatives, and there are various reasons to consider far-flung locations, which don't all involve cost.

"Companies want to spread their geopolitical risk," notes John McCarthy, a vice president at Forrester Research.

Businesses also look for providers

closer to the U.S., specialized expertise and special language requirements.

For FutureTrade, the Internet connection hassle was a glitch outweighed by talent. "The level of education is superb, even relative to the U.S. The University of St. Petersburg offers a computer science degree, and there are thousands of people without jobs," making it easier to retain talent than in India, Dilatush says.

Technology education is known to be high throughout major cities in Eastern Europe.

Minsk, Belarus, for example, is a city of about 2 million with more than 20 schools at the college or university level, says Arkadiy Dobkin, co-founder and CEO of Epam Systems, a services provider in Lawrenceville, N.J., with about 600 programmers deployed in Moscow, Budapest and Belarus.

First Index in Whippany, N.J., which uses Web-based RFQ automation to match buyers and suppliers of manufacturing components, saved application development funds by replacing its own development team with Epam.

"We went from spending \$55,000 to \$30,000 a month," says First Index CEO Russ White, who also considered Indian providers.

Minsk is also closer to New Jersey than Bangalore, notes Bill Burke, company president. "I was surprised at how vibrant it is. Urban infrastructure is good — there's a nice underground, and I was impressed by the Epam facilities; they have the top six floors of a 12-story building, all re-done."

While Minsk and other former Soviet-bloc cities rate high in terms of available talent pool, and generally solid infrastructure, companies with massive IT requirements need to be especially careful when looking elsewhere.

"You can find pockets of talent and high-end infrastructure in different places, in Costa Rica, in Ecuador, for example, but the issue is scale — you can't scale up very high in Costa Rica," says Marc Hebert, a vice president at Sierra Atlantic, a Fremont,

Offshore destinations

India and Ireland represent the largest portions of offshore workers but others such as China, Israel and countries in eastern Europe are growing.

Offshored service market (2003) in \$ billions



SOURCE: IDC, 2004

SOURCE: MCKINSEY GLOBAL INSTITUTE

Just the facts

What's the big deal?

Businesses might look outside of established Indian outsource providers for a variety of reasons: cost, risk mitigation, specialized tech and language skills and proximity to U.S. But the infrastructure to support IT services varies from region to region.

By the numbers

Relative capacity of India to BPO challenger Philippines:

India:

100,000 call center seats (2004 capacity)

50%

forecast annual growth

Philippines:

20,000 call center seats (2004 capacity)

100%

forecast annual growth

SOURCE: DATA MONITOR

"In terms of infrastructure China scores higher than India. They have more telecom density as well as a higher PC penetration."

Kris Gopalakrishnan, COO of Bangalore software services and business process outsourcing company Infosys Technologies, which has set up a subsidiary in Pudong, China.

Calif., outsourcing firm that specializes in ERP and employs Indian developers. "For larger-scale projects you have to go to India, Russia and China."

Even Indian IT services leaders are looking to get a foothold in China.

"In terms of infrastructure, China scores higher than India," says Kris Gopalakrishnan, COO of Bangalore software services and business process outsourcing (BPO) company Infosys Technologies, which has set up a subsidiary in Pudong, China. "They have more telecom density as well as a higher PC penetration."

The infrastructure for BPO services is very much in place in China, according to Gopalakrishnan. "The challenge is to increase the base of English-speaking population in the country," he adds.

Other potential business problems include lack of intellectual property safeguards and cultural differences.

"Because of difference in management style you tend to see some sort of cultural tie or personal tie between China and companies that do business in China," Sierra Atlantic's Hebert says.

This is true of Fremont, Calif., security application company Sygate, whose founder and CTO, Chris Guo, has a master's degree in computer science from Huazhong University of Science and Technology in China, says Bill Scull, senior vice president of marketing.

The company has sales offices in Beijing and programmers at Huazhong, where it does prototyping. "The cost structure is pretty spectacular; it's about one-eighth that of the U.S. And I've been very impressed with the level of infrastructure," Scull says. "We

don't work in a synchronous environment with the U.S., but for our purposes there hasn't been any network outage that would interfere with replicating, for example."

With better English skills than China and a closer cultural affinity for the U.S., the Philippines is one of Asia's fastest-growing services hot spots, especially for BPO facilities such as call centers, according to Miguel Garcia, managing director of call center facilities builder Diversified

Technology Systems in Manila.

"Operational expenditure costs for call centers give U.S. companies a savings of an average of 30% to 40%, and even up 50%," he says.

Manila, the center of Philippine BPO, has a very good transportation system, says Rangan Mohan, president and CEO of Hinduja TMT Limited, a BPO company in Bangalore that last year acquired a majority stake of Customer Contact Center, based in the city. "Transporting employees to their work place is not a major bottleneck and in fact many companies do not undertake this responsibility, as the city's transport system is very good."

Although Mohan says the telecom infrastructure is better than what is available in India in terms of availability and cost per unit bandwidth, reports on communications infrastructure vary.

"Manila can be as expensive as India so to get lower costs you need to go to the suburbs, but the infrastructure is not uniformly good," says Arjun Malhotra, CEO of Headstrong, an IT consulting and services company in Fairfax, Va., with outsourcing facilities in India and Manila. The cost of getting VoIP applications that work well can be prohibitive, he notes.

Currently, the major problem in the Philippines is one of scale. There is a talent pool with skills for BPO, but the country does not produce nearly as many engineers as India, Malhotra notes.

Outsourcing service providers in African countries are at a more basic stage of growth than those in the Philippines. Although South Africa is already home to a handful of international services providers and home-grown providers, other countries on the continent are just beginning to build industrial parks to capture a share of the offshore BPO market.

For early BPO entrants such as Kwame Bonsu, managing director of Rising Data Solutions Ghana, the African terrain has been a challenge. For instance, although Ghana has a link to the SAT 3 intercontinental cable system, the last mile connecting buildings to the 120G bit/sec cable has not been built yet, he says.

U.S. companies, however, might not need to look very far abroad for outsourcing services, especially if cost is not the major issue, and language is a consideration. Canada has a telecom infrastructure virtually identical to the U.S., and thus has the ability to scale, analysts note, but costs are similar. Mexico, however, offers some cost advantages and is particularly appropriate when Spanish services are required.

Mphasis BFL Group, a Bangalore software services and BPO company, last year set up a 50-person call center operation in Tijuana, Mexico, to meet

the requirement of a U.S. customer for a call center in Spanish. "We understand that about 16% to 18% of calls on toll-free numbers in the U.S. are in the Spanish language, and that is the segment that we plan to address," said Ravi Ramu, CFO of Mphasis BFL.

Although Tijuana has proven to be marginally more expensive than India, telecom, road transport and other infrastructure is good enough at the scale the company is operating, he says.

Ferranti is a correspondent with the IDG News Service. Additional reporting by IDG correspondents John Ribeiro and John Yarney.

Promise

continued from page 29

as a result of its offshore projects.

The Cambridge, Mass., company began using offshore service provider i-Vantage to set up its own subsidiary in Hyderabad, India, last year to increase software development.

Troy Kenyon, president and CEO, says the company cut its development costs by about 50% and has gotten to market more quickly than it would have if it had to hire developers in the U.S. That, he says, has resulted in the need to bring on more workers locally.

"For us, offshoring was entirely an expansion. We had no one replaced here and, in fact, we brought in more folks in the United States to work as project managers," he says. "We also got to the point where we needed more sales people more quickly."

Meeting challenges

MedSite, which provides online marketing and education services to the medical community, uses offshore provider Epam Systems to outsource some of its application development work to Minsk, Belarus.

Jason Hogg, COO at the New York company, says that having developers located in different time zones provides a continuity to the application development cycle. But he also says time, cultural and language differences could have posed real problems.

"We've mitigated those problems by having an in-house representative from Epam as a point person," he says.

"That person sits and works with MedSite here, which enables them to ask a lot of follow-up questions and become an integrated member of the company. They also are able to communicate with the people offshore. So we have a single point of contact, project management in one centralized place. That is definitely a benefit." ■

Offshore guidance

Your company

just cleared its first

hurdle by deciding to outsource software development, its customer-care call center or financial business processes to an offshore location. Now where do you go? Who do hire? How do you connect from there to here?

None of these questions is easy to answer, but we'll try at least to point you in the right direction by citing the experiences of software developer Synegy, which has made a significant shift to offshore outsourcing since 2002. The Conshohocken, Pa., maker of enterprise incentive management software now supports about a quarter of its 450 employees in offices in Romania and India.

1. Globetrotting.

Synegy choose the countries where it would set up its offshore offices based on employee familiarity with India and Romania.

"It boils down to us having a feeling of comfort with both locations," says Chetan Shah, executive vice president of technology.

Having acquired a two-person business in Romania, Synegy decided to make the southeastern European country its first offshore outsourcing operation in 2002. Synegy now has 50 employees there.

The company tapped into its European employees' knowledge of the Romanian language, culture and business customs. Synegy employees paid visits to "force compliance of all Synegy processes," Shah says.

The company went through a similar process in India a year later where Shah, who is from India, played an instrumental role in setting up the office. Today, Synegy has 70 employees in India and, with its Romania- and U.S.-based employees, can run its software development operation 24 hours a day.

Seventy percent of the money that U.S. businesses spend on offshore outsourcing involves India, says Partha lyengar, a Gartner vice president and research director in India. But other countries are not standing by idly.

"There are 28 countries that say they are in the position to offer compelling offshore outsourcing services," lyengar says. Organizations should do a country-by-country assessment to be sure they are moving the right projects to the right countries, he says. "Exposure to making the wrong call is quite significant. Once invested in a country, it's hard to disengage."

Businesses should consider several

issues as they choose a country including "rate of wages, supply of new graduates, education, technical skills and broader cultural compatibility," says Peter Lowes, a practice leader for Deloitte Consulting.

With India, companies have to accept a "limited amount of cultural compatibility," a huge time difference and language challenges, Lowes says. While many technically skilled people in India speak English, strong accents still can hinder communications.

Companies also "need to understand how business is done in that country," lyengar says. "There is nothing wrong in a U.S. setting with an employee four tiers down from the CEO calling him by his first name and striking up a casual conversation. This is unheard of in India, Japan and parts of Europe."

2. In the city.

Selecting a city goes hand in hand with choosing a country. Synegy's Shah established four main criteria in an effort to find the right city:

- Reasonable cost of living.
- Proximity to a major airport.
- Access to the right talent pool.
- Lack of political unrest.

The four cities that made Synegy's short list in India were Bangalore, Coimbatore, Mumbai and Pune. Pune won out based on the defined criteria.

Shah concluded that the cost of living was too high in Bangalore and there are not many international flights out of the nearby airport. The engineering talent pool was found lacking in Coimbatore. Shah scratched Mumbai off of his list because political and communal tensions are common and because the cost of living is high.

In Romania, Synegy started off in Iasi, the same city where its two employees were based.

"We did not go through the same city-by-city process as we did in India," Shah says. "We stuck with Iasi, although it's a six-hour drive from the airport, it's an engineering city with a reasonable cost of living."

3. Office job.

Selecting office space in the U.S. can be challenging enough, but doing so overseas adds a layer of complexity.

Synegy's Shah looked at 50 to 60 office sites in Pune, considering factors such as rent, proximity to the business district, the facilities' infrastructure and the layout of the space. But because Shah wasn't familiar with Pune, he turned to a local real estate agent.

Shah wanted an office that was close to other software companies and one that was in an established building, not one under construction.

To ensure the process went smoothly, Shah viewed each office space and ultimately made the selection.

In Romania, Synegy recently moved into a new office in Iasi. The company went through a similar process to find the right space as it did in India, but on a smaller scale. There are not many software companies in Romania for the company to collocate with, so instead, Synegy focused on staying close to the business district.

Local employees narrowed down the selection to a handful of offices. Shah then traveled to Romania and chose one.

4. Picking people.

Synegy got bombarded with résumés when it started its hiring process for Pune. For an office that has only 70 employees, Synegy received 1,000 resumes from software developers and engineers.

"The key to hiring the right people is having the right infrastructure in place to handle the hiring," says Ed Steinberg, Synegy's vice president of human resources.

The company focused on training its human resources staff in Pune to quickly review résumés and set up interviews with appropriate candidates, Steinberg says. "People are willing to take jobs very quickly [in India], and you'll lose them if you don't move fast," he says.

In an effort to attract the right employees, Synegy launched a branding strategy via newspaper ads and billboards in the Pune area. "We wanted

people to know we're not a mom-and-pop shop and we're not one of the big behemoths either," Steinberg says.

Then it turned to one of the largest employment Web sites in India, www.naukri.com, which has proven to be effective. Synegy also has a referral process in place.

In Romania, Synegy relies on word of mouth to staff its office. It took only a year and a half for the office to boom from two to 50 employees. Synegy only employs software developers and engineers in Romania, whereas only half the employees in India fall into those categories. The other half is in client services.

5. Keeping connected.

Synegy turned to the top WAN providers in India to connect its office there with its home base, figuring these companies would be best at getting telecom service up and running in a reasonable amount of time.

The company has a dedicated E-1 (2.048M bit/sec) in India to the Internet to support its IP VPN, which keeps Synegy's critical traffic secure and costs in check. Point-to-point private-line connections from India to the U.S. are prohibitively expensive, Shah says. Using the Internet also lets Synegy more easily switch providers.

The company also has deployed several DSL connections to its office in India for "non-critical traffic," Shah says. A DSL connection costs about \$1,000 annually where an E-1 costs \$50,000 to \$80,000.

While Shah had a hand in setting up the company's WAN and LAN, Synegy hired a systems engineer in India to handle most network issues. The engineer manages about 200 ports on the LAN for both voice and data, Shah says. The company also turned to a local telecom company to wire its network in Pune.

In Romania, like India, Synegy has a dedicated E-1 to the Internet to support a secure IP VPN. It also has a DSL connection for videoconferencing. But the company opted not to hire a systems engineer to manage the 25- to 30-port LAN.

Synegy went through a similar process in finding the right telecom vendors in Romania with "the local talent" hiring a service provider there, Shah says. ■

BY DENISE PAPPALARDO

Face-Off

Do offshoring's benefits outweigh its drawbacks?

YES

S.M. Balasubramaniyan, Wipro Technologies

Organizations all over the world are under constant pressure to provide value to their customers and meet the challenges of competition. In globalized free economies, this is truer today than ever. The primary factor that directly or indirectly contributes toward a company's business success is the cost of production and operation.

Among the many initiatives that have succeeded in reducing the cost of producing goods and services is the outsourcing/offshoring model. This model has taken many forms and its characteristics have been refined over a period of time.

Before enumerating the benefits of offshoring, it must be acknowledged that its success does not come without pain, mainly in the form of job cuts and the phasing out of low-earning products and services. However, organizations that take a well-planned and articulated approach to offshoring succeed in managing this situation better than ones that rush in without due consideration.

Offshoring happens through two means: outsourced offshoring through vendor partners, or in-house offshoring. In the former, the work is performed at the offshore partner's premises, using the partner's resources. In the latter, a U.S. company establishes its own global centers in other countries.

Perhaps the greatest benefit of offshoring is the cost advantage it produces, which directly effects the company's bottom line. In tight fiscal situations, any savings in operating costs will contribute toward the company's sustenance and growth. Companies in recession segments sustain themselves and grow through innovation. Lower operating costs means they have more money to invest in innova-

tion, resulting in a stabilized domestic workforce.

In the service sectors, the cost saving from offshoring enables companies to create new service lines, many of which had been deferred for want of investment. New services increase customer satisfaction and become new revenue streams, as well as growth paths for companies.

The geographic nature of offshoring brings its own advantages. It helps the company expand its reach, thereby helping the company grow. This growth mitigates any negative effects of offshoring.

Offshoring also helps a company be closer to its global customers, thereby providing appropriate offerings to its regional market and ensuring speedier problem resolution. Developers and support personnel in the relevant geographies have a better understanding of customers' needs, regulatory compliances and regional preferences, and can better implement the product or provide the service.

In addition, offshoring alleviates problems created by time differences, enabling companies to support remote customers too in a virtual 24-7 operation. For companies with constrained resources, offshoring also offers better utilization of capital investments through remote usage in multiple time zones.

The key to offshoring success is to exploit its advantages through a well-planned and articulated proposition that looks at the business from multiple dimensions, rather than as a simple cost-reduction exercise. As Franklin D. Roosevelt once said, "The only limit to our realization of tomorrow will be our doubts of today."

Balasubramaniyan is a general manager at Wipro Technologies, a global IT services provider in Bangalore, India. He can be reached at suttamally.bala@wipro.com.



NO

Linda Guyer, Alliance@IBM

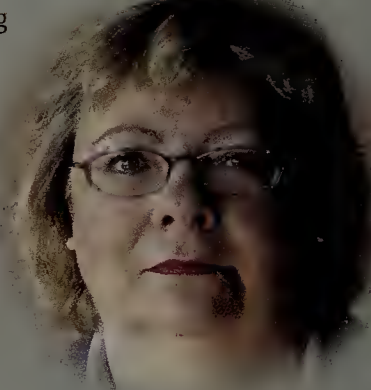
Cracks are appearing in the offshore sidewalk where IT jobs travel from developed countries to places such as India and Costa Rica. There is a plethora of problems that can offset or erase the cost savings of offshoring.

First, offshoring often results in lower customer satisfaction. Outsourcing firms will brag that their employees have excellent English skills, but the reality is often different. The resulting customer dissatisfaction can lead to fewer sales and lost accounts. Language is not just a call center issue; programmers and engineers also have to communicate complicated concepts to their U.S. counterparts and customers.

Quality of service also can be lower. My husband knows this well. He has used and recommended Dell computers for years. Calling for service used to be a decent experience. However, when Dell switched to an overseas call center, his requests for help went from a 5-minute debugging session with an experienced techie, to a painful half-hour or more waiting patiently while someone read through a script of questions. His loyalty to Dell is seriously eroded.

Two years ago, Everdream, an IT services provider in Fremont, Calif., shifted some of its work to Costa Rica, expecting to reduce its call center expenses by 25%. Instead, problems that should have taken 5 minutes to solve were taking an hour. Promises to call customers back went unfulfilled. Everdream also found that it took twice the number of workers in Costa Rica to handle the same tasks that were done in the U.S. Cost savings and quality of service suffered; productivity was worse.

Today, Everdream has phased out its Costa Rica operation and reopened its U.S. centers.



The New York Times recently reported on the experience of Bladelogic, a U.S. designer of network management software. In the story, Bladelogic CEO Dev Ittycheria said, "The cost savings in India were three to one, but the difference in productivity was six to one." Indian entrepreneur Arun Shastry, founder, CEO and CTO of TotalETL, a

data integration firm in Westford, Mass., also pulled the plug on overseas development. Shastry cited lack of employee experience, poor code quality and lack of IT project disciplines, such as design, documentation and project management, as some of the reasons for failure.

Then there are the arguments that offshoring U.S. jobs is unpatriotic and hurts the U.S. economic middle class. While a lot of rosy statistics about how offshoring is good for the U.S. economy are coming from industry groups such as the National Association of Software and Service Companies and the Information Technology Association of America, those statistics are based on some major assumptions (for example, that all the savings resulting from offshoring will be invested in new technologies) that may or may not hold true.

Even Gartner is recognizing the cracks in this trend, recently predicting that in 2004, one in four offshore projects will fail. Would you accept that rate of failure in your application code? Before you look your hard-working American employees in the eye and tell them they have to train their foreign replacement before being laid off, you might want to reconsider the business risks of such a plan.

Guyer is president of Alliance@IBM, Communications Workers of America Local 1701, a union of IBM employees. She can be reached at endicottalliance@stny.rr.com.

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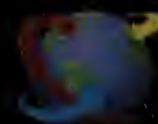
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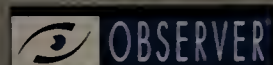
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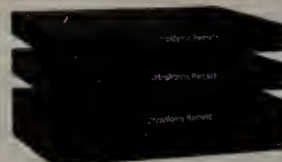
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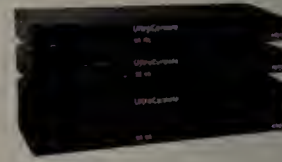


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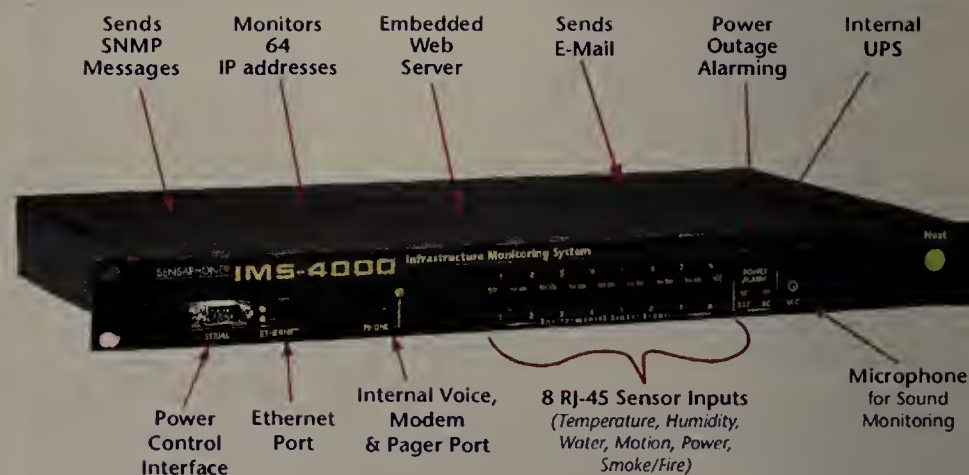
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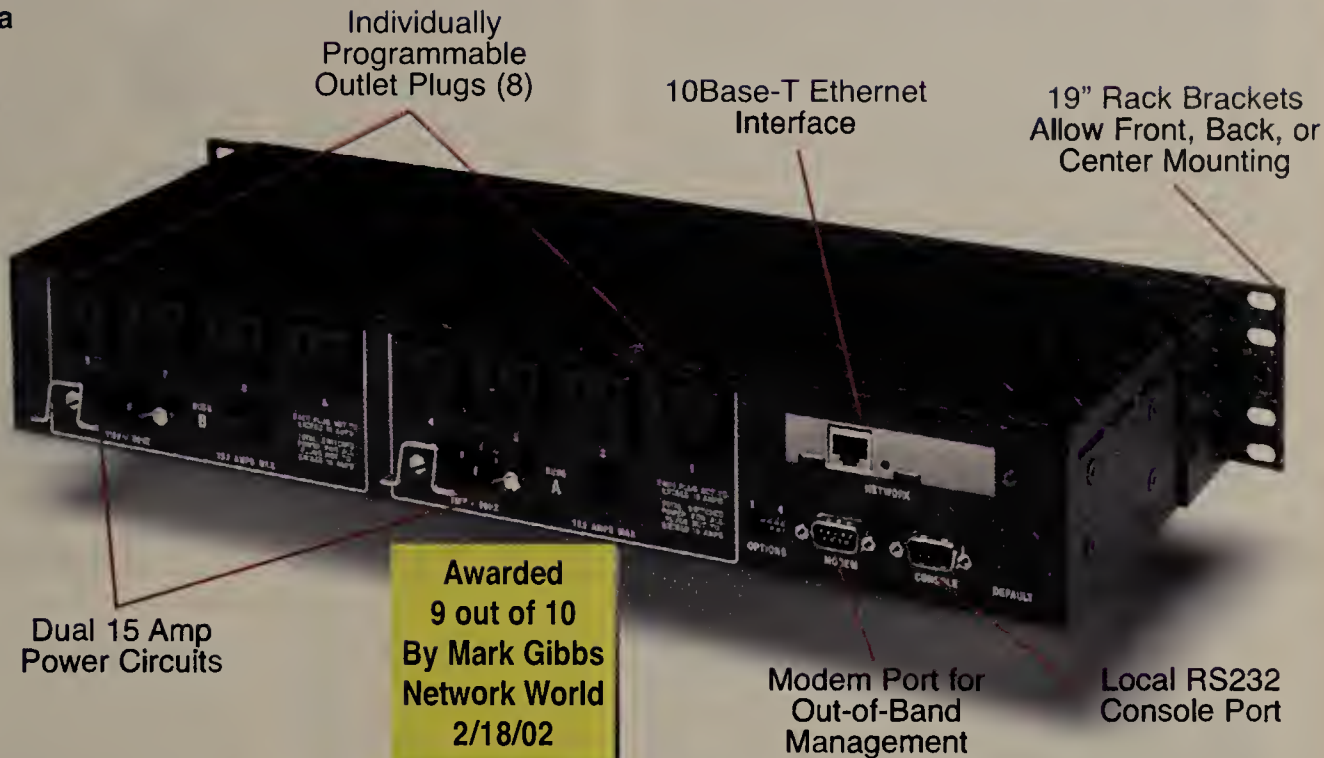
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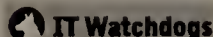


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Customer Engineer - (Southfield, MI) Design car audio systems. Interface w/cust on tech issues/spec dvlp. Analyze product reqmts & perform elec & s/w integration using OEM protocols. Maintain engrg docs using PVCS Tracker. Participate in subsystem level testing in vehicle labs. Bach's deg in Engrg, Elec & Comm Engrg, Elec & Comp Engrg reqd + 5 yrs prog exp in specialty field. Snd resume to PASC, 775 Highway 74th South, Peachtree City, GA 30269, Attn: R Henkel, AP.

Systems Analysts needed. Seeking candidates possessing BS or equivalent and/or relevant work experience. Part of the req. rel. exp. must include 1 year working with SQL Server and VC++. Duties include: Analyze and evaluate requirements; devise system architecture; debug and test programs. Work with the following: Visual C++, C#, VB.Net, Rational Rose, SQL Server and Winrunner. Mail resume, references and salary requirements to: Infotek, P.O. Box 835050, Richardson, TX 75083.

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Sr. Financial Planning Analyst. MBA w/concentration in Finance + 4 yrs rel. fin'l planning exp, incl exp w/capital forecasting & planning of \$20M or above; std costing; Oracle Financial Analyzer; 2 yrs exp with standard costing. CPA certification reqd. Send resumes to Margo Massey, 2510 North Dodge, IA City, IA 52240.

Sr. Network Systems and Data Communications Analyst wanted by company engaged in financial services. Requires B.S. in Comp. Sci. plus 2 yrs. exper. including network design/implementation, network security, expertise in SQL Server replication in distributed environments, strong Exchange Server administration experience, Intel/Dialogic computer telephony development and Visual Studio .Net. Reply to H.R. Dept., Economic Advantages Corp., 71 Central St., Woodstock, VT 05091.

Universal Electronics is looking for a Sr. Software Eng in Advanced Technologies to develop software systems for wireless communication devices. MSCS/CE + 3 yr exp reqd. Resumes w/job code SSE0108 to HR@UEIC.com or by fax to (714) 820-1223. Universal Electronics, 6101 Gateway Dr., Cypress, CA 90630-4841

IT PROFESSIONALS

Manager

(Glen Mills, Pennsylvania and other locations through the U.S.). Involved in the design & implementation of custom, technology enabled business solutions. Function as an integrator between business needs & technology solutions. Responsibilities include defining systems strategy, developing systems requirements, designing and prototyping technical solutions, testing, training, defining support procedures, and implementation. Manage & guide overall scope of engagements and anticipate client needs. Manage all aspects of design build & testing process, review & ensure high quality project deliverables. Work with senior client executives & project teams to guide the design & implementation process, manage & limit risks, & secure approvals for exceptions & their mitigations. Develop & integrate designs across multiple modules, processes, applications & technologies. Integrate & manage build activities across configuration, coding & infrastructure teams. Involved in configuration of User Interface Layer, Business Objects Layer & Data Objects Layer using software development kits, such as Siebel Tools. Configure custom product models & set up product configuration within the chosen package. Assist Consultants with design details relating to configuration of application using package tools, i.e. Siebel Tools, & lead infrastructure discussions to decide on database sizing for Oracle or SQL server back end enablers. Lead data modeling design efforts aimed at developing an analytical & reporting system using such tools as Siebel Analytics for data warehousing & Business Objects for reporting & analytical processing that suit clients business requirements. Involved in process automation using mechanisms like Siebel Workflow Manager. Involved in application & integration architecture using package vendor recommended standards to meet client needs & infrastructure requirements; define integration objects & keys to enforce data synchronization; & design custom staging areas for data.

WAGE: \$100,894.75/year

Hours worked: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS:

Bachelor's degree or equivalent in Computer Science, Engineering (any type), Math, Business Administration or Information Systems + 3 years exp. in the job offered or 3 years exp. as a Senior Consultant, Consultant or Systems Analyst. Related experience must include at least 1 year using datawarehousing tools (Siebel Analytics & Business Objects) Siebel tools, Oracle databases, SQL server, and Workflow Manager. Employer will accept 5 years of related experience in lieu of a Bachelor's degree.

Please send your resume, referencing Job Order Number **WEB431335** to the: Philadelphia Careerlink, FLC Unit, 235 W Cheltenham Ave., Philadelphia, PA 19144. EOE.

Computer Professionals

We have openings for the following positions to work at the client site throughout the United States. Send Resumes to: Webilent Technology Inc, 259 A Main St. Suite #5 Nashua, NH 03060.

Java Programmer Analyst: Design and develop software applications using Java, JDBC, J2EE Websphere, Tomcat and XML. Perform object-oriented methodologies and problem diagnosis.

Visual Basic Programmer Analyst: Design, develop and test software applications using SOL, Server, VB, ASP, .NET and Crystal Reports. Involved in trouble shooting, query optimization, testing and production support.

Mainframe Programmer Analyst: Analyzing the business needs, writing the technical specifications and testing the application using Cobol, DB2, CICS, FileAid and MVS/ESA. Must be able to Performance Tune, Troubleshoot and production support.

Oracle Programmer Analyst: Design, develop and customize oracle applications using Oracle 11i, Forms, Reports, stored procedures and PL/SQL. Solving system issues and performance tuning.

UNIX Systems Engineer: This position involves the analysis and proposal of system hardware, software, and system solutions for centralized HP-UX, AIX and NT enterprise-class computing platforms, running software applications in an Oracle environment.

COMPUTER/SECURITY

PricewaterhouseCoopers LLP's GRMS practice has opportunities available for experienced professionals in the area of Oracle Controls Security. Positions require 3 to 5 yrs related exp. and bachelor's degree in MIS, Finance, or Accounting/Business. Applicants must have experience performing control/security reviews of Oracle applications; experience in EDP audit, Consulting or ERP implementation exp; and CPA and/or CISA certification. Job site/location: Florham, NJ. Interested candidates please reference job code 5BWXTX5 & fax resumes to Gladys Logsdon at 813-329-3919. No phone calls please. Employer will only consider applicants authorized to work for any employer in the U.S.

RedPrairie Corporation, world leader in provision of logistics execution systems, seeks the following: Managers (Technical) for supply chain execution application services at Cary, NC, office, to assist in leading in technical aspects of customer implementation & to mentor/provide administrative lead for group of Software Engineers. Require Bachelor's in Computer Science, MIS, Engineering or related field (equivalent combination education/experience or equivalent experience considered) plus 3 yrs experience in computer-related occupation, including leadership role in project implementing warehouse management or supply chain software, & experience in automated warehouse/distribution systems industry. Senior Manager for supply chain execution application services at Cary, NC, office, with responsibility for major portion of customer TMS products, to interface with internal groups to enable delivery of products that meet customer's need, & to serve as primary point of contact for customers. Require Bachelor's Computer Science, MIS, Engineering or related field (equivalent combination education/experience or equivalent experience considered) plus 5 yrs experience in computer-related occupation, including experience in logistics & supply chain consulting or related field, TMS functionality, & management of logistics projects. Interested candidates should e-mail, fax or mail a resume and cover letter, including code CW1 with salary requirements to:
RedPrairie Corporation
Attn: Organizational Development
20700 Swenson Drive
Waukesha, WI 53186
Fax: 262-317-2638
Email: Recruiter@redprairie.com

EPCON International, Inc. requires a Software Development Engineer with Masters in Computer Science and 1 year experience to develop process engineering/simulation software products in house. Knowledge of Visual Basic, Visual C++, Fortran, scientific computing and Microsoft development environments essential. Please send resumes to Director of Software Development, 16225 Park Ten Place, Suite 600, Houston, TX 77084.

IT PROFESSIONALS

Manager, Customer Relationship Management

(Glen Mills, Pennsylvania and other locations through the U.S.). Responsible for management and direction of technical/development team(s) component for large and/or complex Siebel projects. Develop, monitor and control project plans. Identify and resolve team and inter-team dependencies and issues, involving areas of a full-life cycle Siebel implementation. Document Siebel processes and requirements for implementation using CRM and Siebel best practices. Perform fit-gap analysis of the requirements and translate processes and requirements into functional and technical designs. Develop presentations and conduct business reviews of Siebel designs/prototypes to gain consensus and track and resolve issues and change requests pertaining to the technical/development team(s). Create technical development standards, review work product deliverables for Siebel technical/development team(s) component for quality. Manage the builds between environments (development, testing, production) and understand the different components that need to be migrated and the methods/ steps required for migration of each component. Develop and manage relationships with pier level clients and provide technical expertise. Monitor and evaluate team performance. Contribute to complex proposal development efforts with potential clients for the technical/development components of a CRM implementation.

WAGE: \$100,895/year

Hours worked: Monday-Friday 9:00am-5:00pm

MINIMUM REQUIREMENTS:

Bachelor's degree or equivalent in Computer Science, Engineering (any type), Math, Business Administration, Information Systems or Finance + 6 years exp. in the job offered or 6 years exp. as a Manager, Senior Consultant, Consultant or Analyst. Related experience must include at least 3 years of managing large-scale CRM implementation projects, utilizing Siebel, across multiple modules and industry verticals. Employer will deem foreign educational credentials evaluated by an evaluation service to be the equivalent of a U.S. degree.

Please send your resume, referencing Job Order Number **WEB431127** to the: Philadelphia Careerlink, FLC Unit, 235 W Cheltenham Ave., Philadelphia, PA 19144. EOE.

IT PROFESSIONALS

Senior Consultant

(Glen Mills, PA and other locations throughout the United States). Design and implement decision support systems, fraud detection and other rule based processing systems utilizing Business Rules Engine (BRE) based applications to enable clients to capitalize on market opportunities, re-engineer business processes and implement new processes through component-based development, easy-to-maintain decision tables, dynamic rules, and a sophisticated inference engine that manages and interprets large rule sets. Lead the process of gathering, consolidating, and reconciling data from a variety of different sources to implement and develop OLAP (Online Analytical Processing) Reports. Provide a variety of informational services utilizing predictive "data mining", and business support services, to deliver critical data to key decision makers using Business Objects. Create and develop custom applications using PL/SQL procedures with Oracle as the back-end and create logical and physical data models and star schemas using ERWIN. Create automated testing scripts for Mercury Interactive Load Runner/Win Runner to support Load Testing and lead the system integration and performance testing, develop testing strategy, plan/track tests, and conduct user acceptance testing and defect triage using Mercury Interactive Test Director.

The wage offered is \$81,700/year. The work schedule is Monday-Friday 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Computer Science, Business Administration, Information Systems, Engineering (any), or Mathematics plus 4 years experience in the job offered or 4 years experience as a Senior Consultant, Team Lead, Consultant or Systems Analyst. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited institution of higher education in the United States. Related experience must also include at least six months of implementation of Business Rules Engine (BRE) based applications; implementation of OLAP (Online Analytical Processing) reports using Business Objects; creation of custom applications using PL/SQL and Oracle as the back-end; creation of star schemas using ERWIN; and creation of automated testing scripts for Mercury Interactive Load Runner/Win Runner.

Please send your resume, referencing Job Order Number **WEB 428199** to the: PA CareerLink, FLC Unit, 235 W. Cheltenham Avenue, Philadelphia, PA 19144. EOE.

Database Analysts needed.

Seeking qual. candidates possessing BS or equiv. and/or rel. work exp. Part of the req. rel. work exp. must include 2 yrs working w/ Coldfusion, ASP, & HTML. Duties include: Manage, organize, & optimize databases; Gather req.; Define functional capabilities of databases & develop security spec. Work with SQL, HTML, XML, ASP, & Coldfusion. Send res., ref. & sal. req. to BCS Inc., 5550 Sterrett Pl., #306, Columbia, MD 21044.

IT Professionals sought for dsgn, dvlpmt, testing & implmnt of server side s/ware & d/base systems. MS/BS in Comp Sci, Eng, or related field w/exp in TCP/IP, SQL, JAVA, C/C++, .NET, UNIX, QA. Applicants must be willing to relocate/travel to various unanticipated locations in US. Mail resume to HR, K2 Software Group, LLC, 1111 E. Lincoln Way, Ste 114, Cheyenne, WY 82001 or email: wasif@k2softwaregroup.com.

Computer Research Scientist

Ph.D. in CS + 2 yrs. exp. required to create system network solutions utilizing video encoding in MANET and Bluetooth Scatternets with host architectures of multi-threaded caching and cut-through networking. Salary \$88K. Location, Torrance, CA. Send resume to cspence@broadatacom.com.

Radiant Soft Sol, Inc., a S/ware Consulting Comp. has permanent positions open for Computer Software Professionals with a B.S. or equivalent degree in Arlington Heights, IL, Cheyenne, WY & other unanticipated locations in the US:
(i) Software Engineers, Database Analysts & Network Analysts with 3 yrs. exp.
(ii) Business/Systems/Programmer/OA Analysts with 2 yrs exp. Respond by resume to HR, 855 E. Golf Road, #1125, Arlington Heights, IL 60005.

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IT PROFESSIONALS

Senior Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.) Lead custom design and development teams for building complex enterprise applications in the public sector industry utilizing custom development tools including Java, Java2 Platform Enterprise Edition (J2EE), Enterprise Java Beans (EJB), Visual Basic (VB), Message Queue Series (MQ), C++, Rational Rose and Relational Databases including Oracle, DB2, Sybase ASE, testing tools like Mercury and Compuware and eBusiness. Job responsibilities include Technical Architecture using Enterprise Application Server IBM Websphere and technology integration. Map the client's business processes, organization and technology to new technology solutions. Provide potential gap resolution alternatives. Create designs for complex technical requirements (gap analysis, infrastructure, interfaces, reports, enhancements and conversions). Manage code development and lead teams of architects, developers and analysts. Execute complex infrastructure build activities. Participate in the development of test plans, test scripts, test cases and acceptance criteria. Manage components of engagements and develop work plans.

The wage offered is \$75,780 per year. The work schedule is Monday-Friday, 9:00 am to 5:00 pm. The minimum requirements are as follows: *Bachelor's degree or equivalent in Computer Science, Math, Business Administration, Engineering (any) or Information Systems + 2 years and 6 months of experience in the job offered or 2 years and 6 months of experience as a Senior Consultant, Systems Engineer or Senior Systems Engineer. Related experience must include Technical Architecture and technology integration utilizing Enterprise Application Server IBM Websphere, Java, J2EE, EJB, VB, MQ, C++, Rational Rose, Relational Databases (Oracle, DB2 and Sybase ASE), Testing Tools (Mercury and Compuware), eBusiness delivery and one year of experience must be in Public Sector Industry (Courts, Corrections and Integrated Justice processes). *Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited educational evaluation service.

Please send your resume, referencing Job Order Number **WEB431274** to the: PA CareerLink, FLC Unit, 235 West Chelton Avenue., Philadelphia, PA 19144. EOE.

Computers-Coordinator, Computer Systems needed. Seeking qual. candidates for the University of South Florida's Tallahassee Client/Server Support Group. ABS or equiv. & 3 yrs. rel. exp. OR relevant work exp. req'd. Part of the req. relevant exp. must include 2 yrs. working w/ EJB, XML & Oracle. Duties include: Design, develop & deploy software systems using secure file transfer; implement & maintain client/server & worldwide web computer systems. Work with J2EE, EJB, XML, Oracle, JDeveloper, PL/SQL Server Pages. Send resume & cover ltr. to: University of South Florida, Attn: Susan Niemas, EDU 162, 4202 East Fowler Avenue, Tampa, FL 33620.

Programmer - Position for Programmer. Responsible for providing application development tasks (requirements, design, coding and testing) of enhancements to WEB based customer service application (WES) on time and within budget. Will also debug program errors and production discrepancies, accommodating the IS deliverable schedule and application installation commitments utilizing JAVA, HTML and Java Script, servlets. 40 hours per week. Hours are 8:00 a.m. to 5:00 p.m., Monday through Friday. Must have Bachelor's Degree in Mechanical Engineering, Information Technology or equivalent. Two years experience necessary. Pay is \$51,205 per year. Job Order No. FL-2529798. Job located in Tampa, FL. Send resume to: Agency for Workforce Innovation, P.O. Box 10869, Tallahassee, FL 32302-0869.

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IT Developer/Analyst: Job located in Largo, FL; Responsible for the maintenance and enhancement of Oracle Application modules, as well as providing expertise for the design and implementation of new Oracle Application modules using Oracle Forms/Reports, SQL*Plus, PL/SQL, Oracle Database in a Unix operating system environment. Requires a B.Sc. or foreign equiv. in Comp. Sci., Engineering, Info. Systems Mgmt. or a closely related field and at least five years of work exp. in this or a related position. 40 hrs/wk. M-F, 8:00 am - 5:00 pm. \$75,000/yr. Interested parties should submit resumes to: Workforce Program Support, Attn: EH, P.O. Box 10869, Tallahassee, FL 32302-0869. Job Order FL-2529336.

SOFTWARE ENGINEER to provide on-site consultancy in analysis, design, development, implementation, customization and maintenance of web-Methods B2B Server, distributed and web based application software using webMethods Integration Platform, webMethods workflow, Microsoft and Sun technologies, VB, ASP, Java, JSP, Java Servlets, SQL Server on Windows and Sun Solaris. Require: B.S. in Computer Science/Electronics Engineering and three years experience in the job offered or any experience providing skills in described duties. 40% travel to client locations within the United States required. Competitive salary and benefits, 40-hr week, M-F. Apply with resume to: President, Frontline Consulting Services, Inc., 8701 Mallard Creek Road, Charlotte, NC 28262.

Technical Analyst System Development: research, evaluate, implement and coordinate changes, maintenance and technical support of systems or applications. Compile and write documentation to describe program development, performs research, identifies program problems and develops solutions. Code, test, debug, document and maintain application programs. Resolves problems by evaluating processes and implementing necessary corrective measures implement and document modifications to software applications currently in use. Req. BS or equivalent in CS or MIS with proficiency in COBOL, SAS, and JCL. 40 hr/wk, 8-5. Fax resume to 870-365-4966.

Programmer Analysts. We are seeking candidates who possess a BS or equiv and 2 years relevant work experience. Education must include coursework in Java and Computer Programming. One year of post bachelors experience will be considered in lieu of 1 year related work experience. Duties include: Plan, develop, code and test comp programs. Work with SQL Server, Analysis Services, Panorama Noraview and Java. Mail resume, ref, trans and salary reqs to: HCR Manor Care, 333 N. Summit Street, Toledo, OH 43604. EOE.

Technical Support Specialists needed. Seeking cand's possessing BS or equiv and rel work exp. Part of rel work exp. must include 2 years working with SQL and Visual Basic Applications. Duties include: Assist end users to resolve problems with hardware and software. Work with SQL, Oracle, ASP and VBA. Mail resume, transcripts, refs and salary reqs to: HCR Manor Care, 333 N. Summit Street, Toledo, OH 43604. EOE.

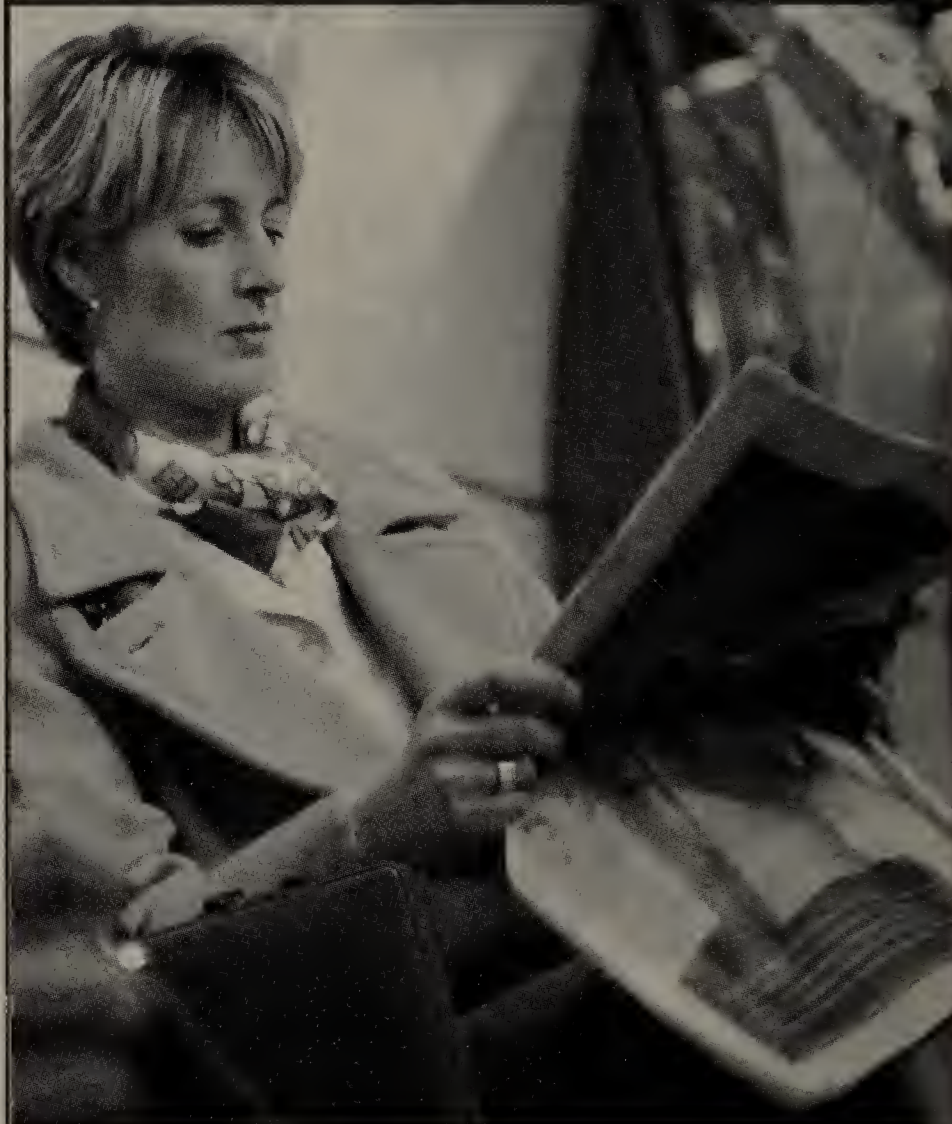
Technical Support Specialists needed. Seeking cand's possessing BS or equiv and/or rel work exp. Our company will accept 1 year of post baccalaureate experience in lieu of 1 year of required years of experience. Education must include coursework in Database Systems and Java either at the baccalaureate or graduate level. Duties include: Assist users to resolve problems in hardware or software and work with Java. Mail resume, references and salary reqs to: HCR Manor Care, 333 N. Summit Street, Toledo, OH 43604.

BCC USA Inc. - Portland, Maine needs experienced Programmer Analysts having a Bachelors degree with minimum two years of progressive work experience in SAP, QTP, WinRunner, Oracle, SQL, PL/SQL, Java, J2EE and HTML. Competitive salary and benefits. M-F, 40 hours/week. Please mail your resume to BCC USA Inc., HR Department, 650 Main Street, Suite 201, South Portland, ME 04106.

Webmaster wanted by Gbl Mktg Rsrch Co in TX. Oversee admin & maintenance of web-based sys run on multi platform & web servers; design, implement & maintain production websites; maintain/optimize Oracle & SQL server databases utilized with web-based sys. MS in Comp Sci & 1yr exp in job offered req. Respond to: VP HR/MBI, 1250 Capital of Texas Hwy, Bldg 1, Ste 600, Austin, TX 78746.

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Periodicals postage paid at Southborough, Mass., and additional mailing offices. Posted under Canadian International Publication agreement #40063800. Network World (ISSN 0887-7661) is published weekly, except for a single combined issue for the last week in December and the first week in January by Network World, Inc., 118 Turnpike Road, Southborough, MA 01772 9108.

Network World is distributed free of charge in the U.S. to qualified management or professionals.

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BackSpin Mark Gibbs



Defaults ON, adverts OFF

"Who'd a thunk a firewall would be set by default to screen advertising?"

— Stephen Mahaney, at www.nwfusion.com, DocFinder: 2741.

My friend Jim dropped me a note the other day asking if I knew of any reason why Google should suddenly stop showing links for its paid-for ads. I checked Google from my browser and nothing seemed amiss, so we tried to find the cause.

We checked browser settings, did a Google search for any content that might be related, switched off Symantec's Norton Antivirus, rebooted, made sure his Windows patches were up to date, rebooted and were finally about to sacrifice a chicken to appease the gods when I had to leave him to it when other crises loomed.

I got a note from Jim this morning pointing me to a Web site (DocFinder: 2741) that explains it all. There you will find the comments of Mahaney, president of Planet Ocean Communications (that's the company that owns the site).

Mahaney's business is "permission e-mail marketing solutions" or "search engine promotion experts," depending on where you look, which is to say he has attracted a lot of anger over his e-mail marketing tactics. For example, see the Internet Deadbeats' Hall

of Fame (DocFinder: 2742) and an exchange on a firewall discussion list (DocFinder: 2743). My point is he has a huge ax to grind on the issue of blocking advertising, and he is not one to favor the idea.

Mahaney's discourse explains that "Norton Personal Firewall/Internet Security 2004 (NPFW/IS2004) ships with an ad-blocking feature — with the default set to on."

Ah-ha. The swines. In my brief diagnostic/analysis/wild thrashing about this session with Jim via phone I had neglected to jump to the totally unobvious conclusion that the problem lay in something a Norton product was doing.

Now I've had my fair share of software that hasn't had vital security settings switched on. For example, last year I tested a mail server that was configured by default as an open relay and two months later I was still trying to get my mail server taken off a couple of the more brutal black hole lists.

The decision by Symantec to default to screening advertising is definitely not as dangerous as defaulting to an open relay, but not telling users is simply a bad idea.

As for Jim, who is an online marketing expert, he wants to see the ads, and as a competent computer user he is perfectly capable of running his PCs — at least until a vendor does something like Symantec did. If it screwed up Jim, a smart user, just think what

it will do to the legions of naive users!

But there is more at stake. In Mahaney's story he bemoans Symantec's decision: "Symantec almost has a lock on the Internet security business via their Norton Anti-Virus Protection niche. And now, NPFW/IS2004 is being used on the overwhelming majority of new corporate and personal computers. Furthermore, NPFW/IS2004 is being bundled with many, if not most, new systems being shipped. It's the No. 1 Internet security software, and it's doing its best to torpedo your advertising efforts."

Mahaney continues: "Naturally, to online marketers like you and me, this problem is a real concern. That's why we've assigned some of our best people to come up with a fix. And they've done so. It isn't perfect (yet) but it beats the pants off every other 'solution' we've found thus far. Are we willing to share? ... Sure. To get the scoop on what we've got so far, see this month's resource article."

To get the resource story you have to be a subscriber to "Search Engine News," which is published by Mahaney's company and to which I am not a subscriber. If any of you have access to this story, I would love to hear a summary of what it covers.

All of this raises some interesting questions — that we'll delve into next week. Messages to backspin@gibbs.com will not be blocked.



'NetBuzz News, insights, opinions and oddities

By Paul McNamara

A couple of slam-dunks

Wireless telephone directories are going to happen whether wireless cus-

tomers like the idea or not. So, too, will hands-free-only become the law of the land — everywhere — for operation of a telephone while driving, the preferences of motormouths be damned.

Bellyache all you want, but bellyaching will do no good. The operative questions are when and how, not if.

Let's start with the directories.

"Customers view their cell phones as one place where they have control," Verizon CEO Denny Strigl told an audience last month at The Yankee Group's 2004 Wireless Leadership Summit. "Why tear down the wall of privacy that is unique? We spent decades building that wall."

Strigl knows full well why, even if he's decided that his company stands to benefit in the short run from taking a hard-line stand against such directories. That wall is coming down because there's an enormous pile of money on the other side. It's coming down because millions of consumers and businesses are ditching their land lines altogether in favor of wireless — and they are not going to crouch behind a wall of anonymity forever.

The Cellular Telecommunications & Internet Association has raised hackles by promising to develop a wireless directory by year-end. CTIA has sworn on a stack of phone books that it will not have anything to do with listing the numbers of those who would rather remain walled off, nor will it countenance any attempt to charge a fee for the privilege of remaining unlisted (much as Strigl's company charges me a few bucks a month to keep my landline number private).

Critics scoff at both assurances — as well they might — but their skepticism will not keep wireless directories at bay. The critics' best-case scenario is meaningful federal regulation and the possibility that market forces will keep in check

the more aggressive commercial instincts of directory providers.

As for people who enjoy driving with a phone to one ear and their eyes who knows where, they have no hope whatsoever. New Jersey and Washington, D.C., last week joined New York in outlawing the practice.

This week I heard a radio DJ complaining about the possibility of it happening here in Massachusetts, where legislation is winding its way through the statehouse. The fellow said he's quite confident of his ability to hold a telephone and the wheel simultaneously. He is not alone.

Nor will he be alone in his disappointment. Reason will prevail on this issue.

More about Meetup

Last week we noted a report from Meetup about the number of in-person forums organized through its Web site in support of the presidential contenders. On just one day there were 43 local meetings organized nationwide by backers of President Bush, and 617 for his Democratic challenger, Sen. John Kerry.

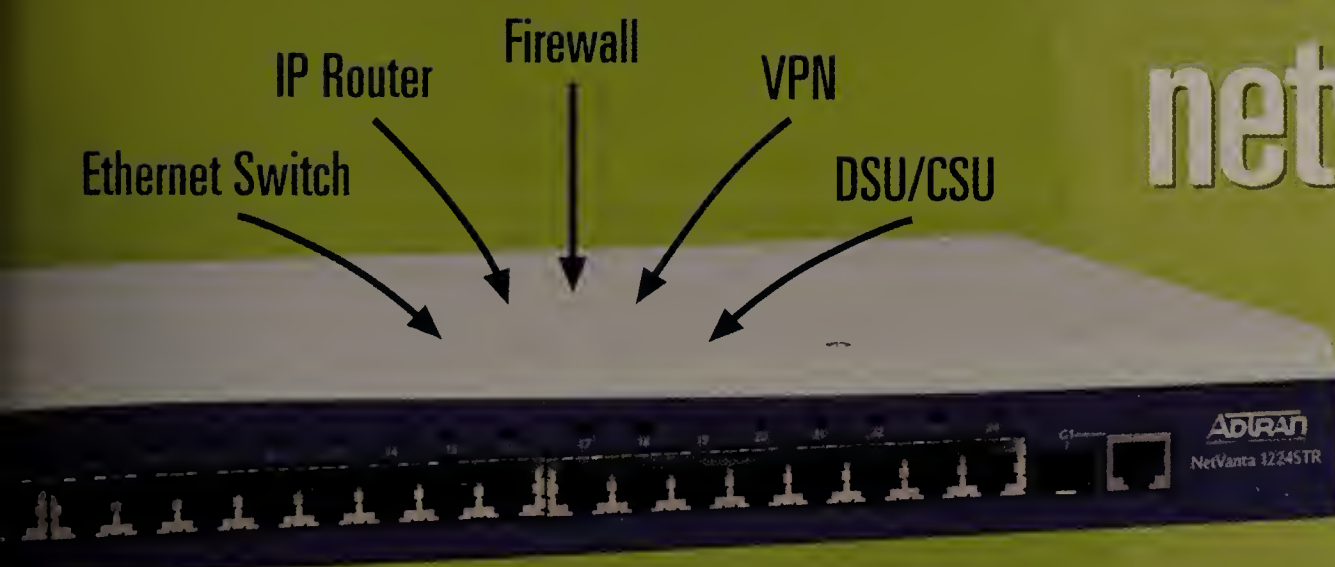
While this might be seen as encouraging news for Kerry, the same cannot be said for Meetup, whose business prospects are not helped if the company gets pegged as primarily a liberal bastion. I asked Meetup about this but the company's reply came too late for last week's column. Here's what they said:

"We're doing what we can to ensure Meetup isn't construed as serving one side more than the other ... but it's really been the people from the bottom up who are engaging in meetups that are shaping the perceptions," says spokesman Myles Weissleder. "The fact remains, more liberals choose to meetup with their like-minded neighbors than conservatives."

"Another false perception: Meetup serves the young, digerati. In reality, there are more people over the age of 40 than under who use the service. A surprise even for us," he says.

This column has always served digerati young and old. The address is buzz@nww.com.

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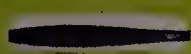


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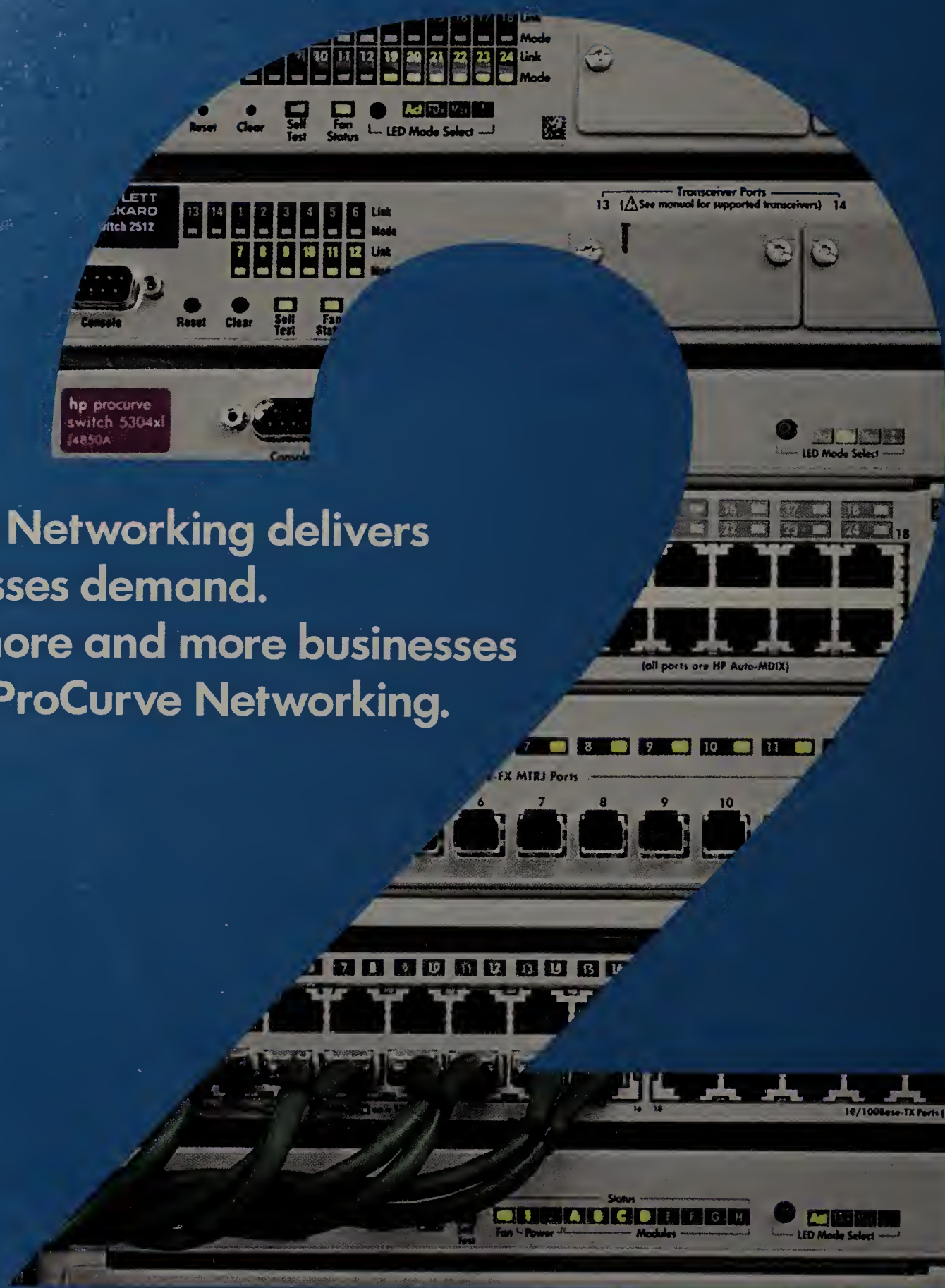
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